

Service  
Service  
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# Service Manual

Horizontal Frequency  
30-83 KHz

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## SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

## Revision List

[illegible]

## Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all AOC Company Equipment. The service procedures recommended by AOC and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. AOC could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, AOC has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by AOC must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, AOC Company will be referred to as AOC.

### WARNING

Use of substitute replacement parts, which do not have the same, specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from AOC. AOC assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

### FOR PRODUCTS CONTAINING LASER:

DANGER-Invisible laser radiation when open AVOID DIRECT EXPOSURE TO BEAM.

CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person's body is grounded through wristband.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- Avoid contact with water as it may a short circuit within the module.
- If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

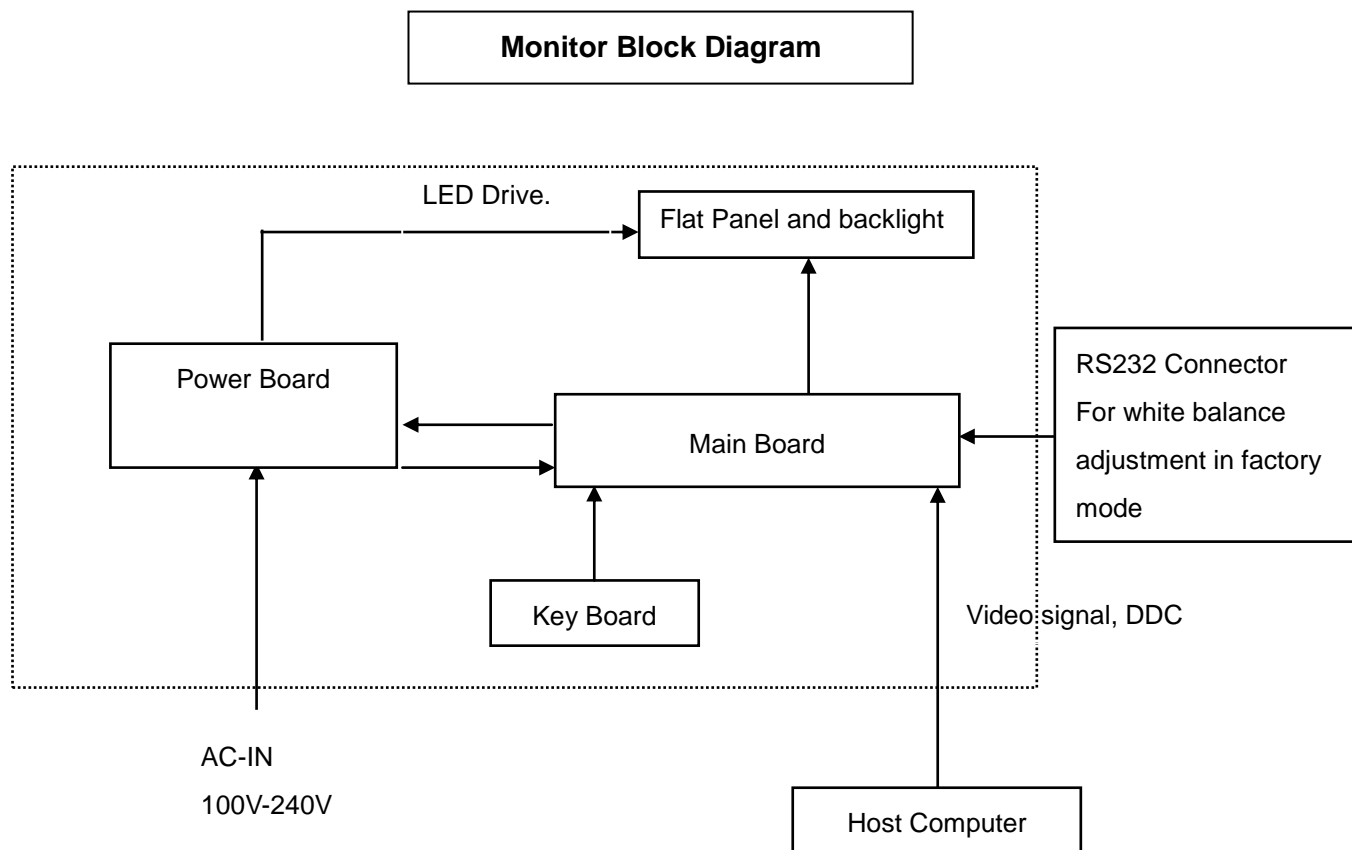
## 1. Monitor Specifications

|                          |  |  |
|--------------------------|--|--|
| Panel                    | Model name   | E2060SWDA/ E2060PWDA<br>/E2060SW/E2060SWD    |
|                          | Driving system                                     | TFT Color LCD                                |
|                          | Viewable Image Size                                | 49.5cm diagonal                              |
|                          | Pixel pitch  | 0.27mm(H)X0.27mm(V)                          |
|                          | Video (E2060SWDA/<br>E2060PWDA/E2060SWD)           | R, G, B Analog Interface & Digital Interface |
|                          | Video (E2060SW)                                    | R, G, B Analog Interface                     |
|                          | Separate Sync.                                     | H/V TTL                                      |
|                          | Display Color                                      | 16.7M Colors                                 |
|                          | Dot Clock  | 108MHz                                       |
| Resolution               | Horizontal scan range                              | 30 kHz - 83 kHz                              |
|                          | Horizontal scan Size(Maximum)                      | 432mm  |
|                          | Vertical scan range                                | 50 Hz - 76 Hz                                |
|                          | Vertical scan Size(Maximum)                        | 239.76mm                                     |
|                          | Optimal preset resolution                          | 1600×900@60Hz                                |
|                          | Plug & Play  | VESA DDC2B/CI                                |
|                          | Input Connector<br>(E2060SWDA/ E2060PWDA/E2060SWD) | D-Sub 15pin; DVI 24pin                       |
|                          | Input Connector (E2060SW)                          | D-Sub 15pin;                                 |
|                          | Input Video Signal                                 | Analog: 0.7Vp-p(standard), 75 OHM, TMDS      |
|                          | Power Source                                       | 100-240V~, 50/60Hz                           |
|                          | Power Consumption                                  | Active: 23 W (typical)                       |
|                          |  | Standby < 0.5 W                              |
|                          | Off timer  | 0-24 hrs                                     |
|                          | Speakers(E2060SWDA/ E2060PWDA)                     | 2WX2   |
| Physical Characteristics | Connector Type<br>(E2060SWDA/ E2060PWDA/E2060SWD)  | 15-pin Mini D-Sub DVI-D                      |
|                          | Connector Type (E2060SW)                           | 15-pin Mini D-Sub                            |
|                          | Signal Cable Type                                  | Detachable                                   |
| Environmental            | Temperature:                                       |  |
|                          | Operating  | 0° to 40°                                    |
|                          | Non-Operating                                      | -25° to 55°                                  |
|                          | Humidity:  |  |
|                          | Operating  | 10% to 85% (non-condensing)                  |
|                          | Non-Operating                                      | 5% to 93% (non-condensing)                   |
|                          | Altitude:  |  |
|                          | Operating  | 0~ 3658m (0~ 12000 ft )                      |
|                          | Non-Operating                                      | 0~ 12192m (0~ 40000 ft )                     |

## 2. LCD Monitor Description

The LCD monitor will contain a main board, a power board, a key board which house the flat panel control logic, brightness control logic and DDC.

The power part will provide AC to DC Inverter voltage to drive the backlight of panel and the main board chips each voltage.



## 3. Operating Instructions

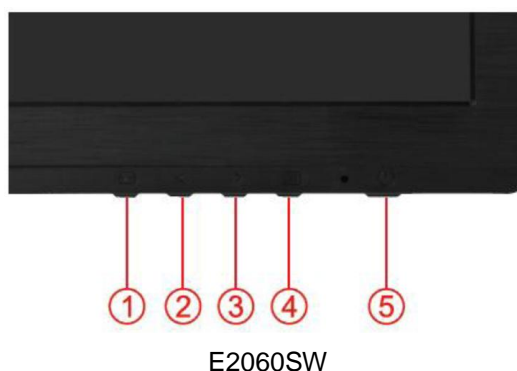
### 3.1 General Instructions

This monitor only has one external control function button; press the Power/Auto Configuration button to turn the monitor on or off.

If you need to adjust other functions, please visit the official AOC website ([www.aoc.com](http://www.aoc.com)) to download and install AOC's exclusive i-Menu application software, and then perform related function adjustments to get the screen you require.

- Connect the power cord properly.
- Connect the signal cable onto the PC's graphics card.
- Push the button to start the monitor, and the power indicator will light up..

### 3.2 Control Buttons



|   |                 |
|---|-----------------|
| 1 | Auto/Exit       |
| 2 | ECO(DCR)/<      |
| 3 | 4:3 or Wide / > |
| 4 | Menu/Enter      |
| 5 | Power           |

#### Power

Press the Power button to turn on/off the monitor.

#### Eco (DCR)/ <

Press the Eco key continuously to select the Eco mode of brightness and DCR on when there is no OSD. ( Eco mode hot key may not be available in all models).

#### Volume / >

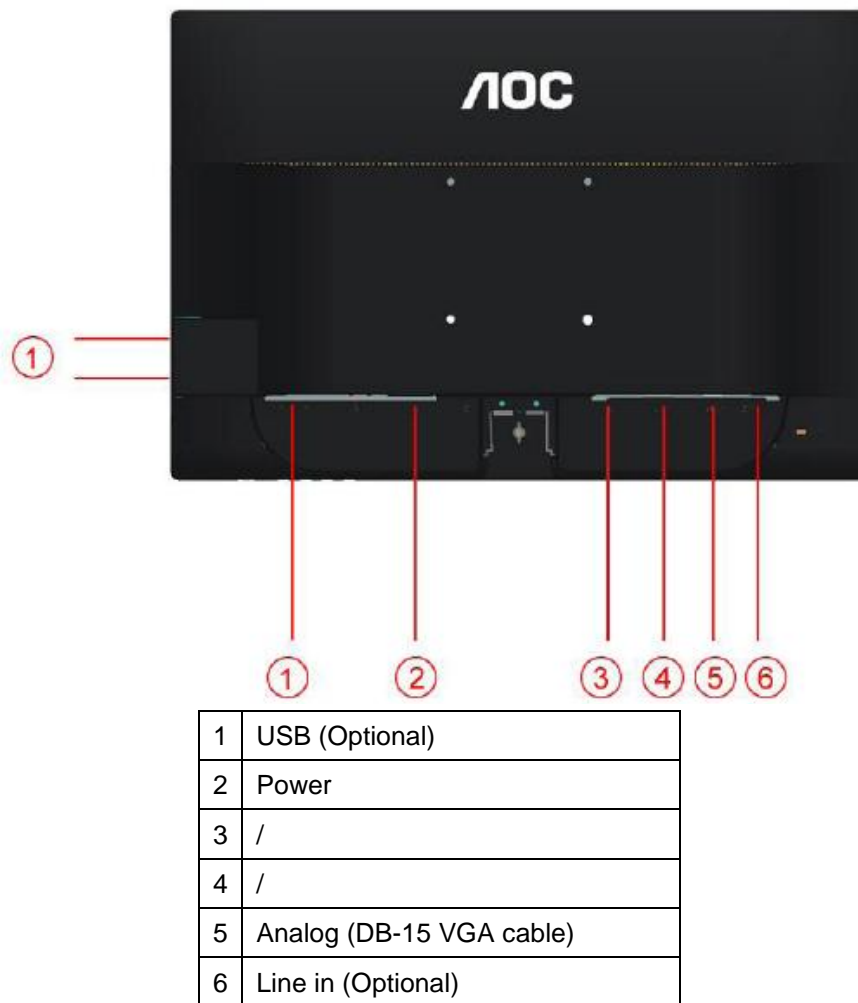
When there is no OSD, Press Volume button to active volume adjustment bar, Press < or + to adjust volume (Only for the models with speakers)

#### Auto / Exit

When there is no OSD, press Auto/Source button continuously about 3 second to do auto configure .

#### Source hot key

When the OSD is closed, press Source button will be Source hot key function. Press Source button continuously to select the input source showed in the message bar , press Menu/Enter button to change to the source selected



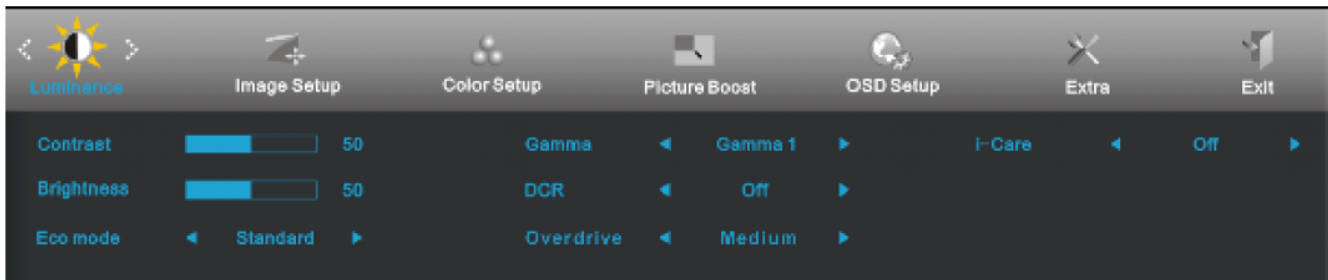
To protect equipment, always turn off the PC and LCD monitor before connecting.








1. Connect the power cable to the AC port on the back of the monitor.
2. Connect one end of the 15-pin D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.
3. (Optional) Connect the audio cable to audio in port on the back of the monitor
4. Turn on your monitor and computer.

If your monitor displays an image, installation is complete. If it does not display an image, please refer Troubleshooting.

### 3.3 OSD Setting

Basic and simple instruction on the control keys.



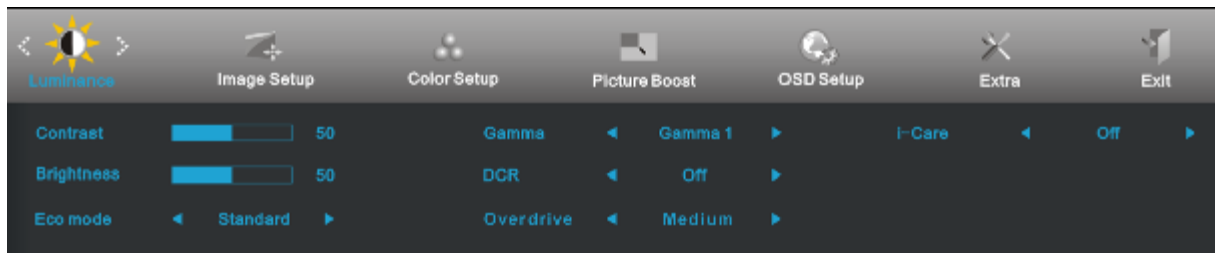
- 1) Press the  **MENU-button** to activate the OSD window.
- 2) Press < or > to navigate through the functions. Once the desired function is highlighted, press the  **MENU-button** to activate it . press< or >to navigate through the sub-menu functions. Once the desired function is highlighted, press  **MENU-button** to activate it.
- 3) Press< or >to change the settings of the selected function. Press AUTO to exit. If you want to adjust any other function, repeat steps 2-3.
- 4) OSD Lock Function: To lock the OSD, press and hold the  MENU button while the monitor is off and then press  **power button** to turn the monitor on. To un-lock the OSD - press and hold the  MENU button while the monitor is off and then press  **power button** to turn the monitor on.

#### Notes:


- 1) If the product has only one signal input, the item of "Input Select" is disable to adjust.
- 2) If the product screen size is 4:3 or input signal resolution is wide format, the item of "Image Ratio" is disable to adjust.
- 3) One of DCR, Color Boost, and Picture Boost functions is active, the other two function is turned off accordingly.



## Luminance











1 Press **MENU** (Menu) to display menu.

2 Press < or > to select  (Luminance), and press **MENU** to enter.

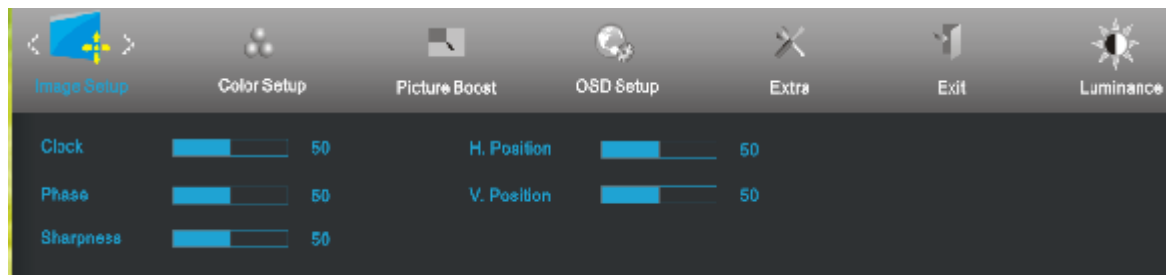
3 Press < or > to select submenu, and press **MENU** to enter.

4 Press < or > to adjust.


5 Press **AUTO** to exit.

|   |            |          |   |   |
|---|------------|----------|---|---|
|  | Brightness | 0-100    |   | Backlight Adjustment  |
|   | Contrast   | 0-100    |   | Contrast from Digital-register.   |
|   | Eco mode   | Standard |  | Standard Mode   |
|   |            | Text     |  | Text Mode   |
|   |            | Internet |  | Internet Mode   |
|   |            | Game     |  | Game Mode   |
|   |            | Movie    |  | Movie Mode  |
|   |            | Sports   |  | Sports Mode   |
|   | Gamma      | Gamma1   |   | Adjust to Gamma1  |
|   |            | Gamma2   |   | Adjust to Gamma 2   |
|   |            | Gamma3   |   | Adjust to Gamma 3   |
|   | DCR        | Off      |   | Disable dynamic contrast ratio  |
|   |            | On       |  | Enable dynamic contrast ratio   |
|   | Overdrive  | Weak     |   | Adjust the response time<br>(only for E2260PHU/E2260SHU/<br>E2460PWHU/E2460SWHU/E2460SHU/E2460PHU)                            |
|   |            | Medium   |   |   |
|   |            | Strong   |   |   |
|   |            | Off      |   |   |
|   | i-Care     | On       |   | adjusts the brightness according to light intensity<br>(only for E2260PHU/E2260SHU/<br>E2460PWHU/E2460SWHU/E2460SHU/E2460PHU) |
|   |            | Off      |   |   |

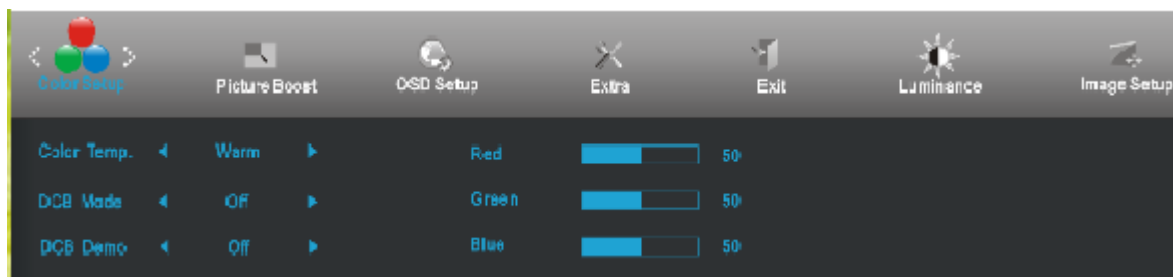
## Image Setup



- 1 Press **MENU** (Menu) to display menu.
- 2 Press < or > to select  (Image Setup), and press **MENU** to enter.
- 3 Press < or > to select submenu, and press **MENU** to enter.
- 4 Press < or > to adjust.
- 5 Press **AUTO** to exit.

|  |            |       |  |
|--|------------|-------|--|
|  | Clock      | 0-100 | Adjust picture Clock to reduce Vertical-Line noise.  |
|  | Phase      | 0-100 | Adjust Picture Phase to reduce Horizontal-Line noise |
|  | Sharpness  | 0-100 | Adjust picture sharpness                             |
|  | H.Position | 0-100 | Adjust the horizontal position of the picture.       |
|  | V.Position | 0-100 | Adjust the vertical position of the picture.         |

## Color Setup




1 Press **MENU** (Menu) to display menu.

2 Press < or > to select  (Color Setup), and press **MENU** to enter.

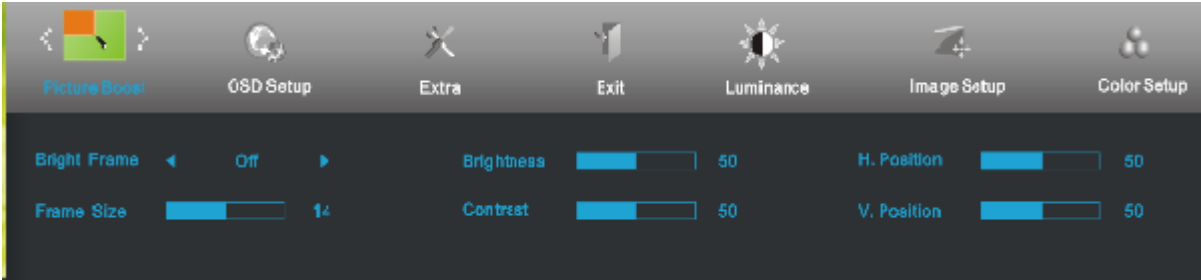
3 Press < or > to select submenu, and press **MENU** to enter.


4 Press < or > to adjust.


5 Press **AUTO** to exit.

|   |              |              |           |  |
|---|--------------|--------------|-----------|--|
|  | Color setup. | Warm         |           | Recall Warm Color Temperature from EEPROM.   |
|   |              | Normal       |           | Recall Normal Color Temperature from EEPROM. |
|   |              | Cool         |           | Recall Cool Color Temperature from EEPROM.   |
|   |              | sRGB         |           | Recall SRGB Color Temperature from EEPROM.   |
|   |              | User         | Red       | Red Gain from Digital-register               |
|   |              |              | Green     | Green Gain Digital-register.                 |
|   |              |              | Blue      | Blue Gain from Digital-register              |
|   | DCB Mode     | Full Enhance | on or off | Disable or Enable Full Enhance Mode          |
|   |              | Nature Skin  | on or off | Disable or Enable Nature Skin Mode           |
|   |              | Green Field  | on or off | Disable or Enable Green Field Mode           |
|   |              | Sky-blue     | on or off | Disable or Enable Sky-blue Mode              |
|   |              | AutoDetect   | on or off | Disable or Enable AutoDetect Mode            |
|   | DCB Demo     |              | On or off | Disable or Enable Demo                       |

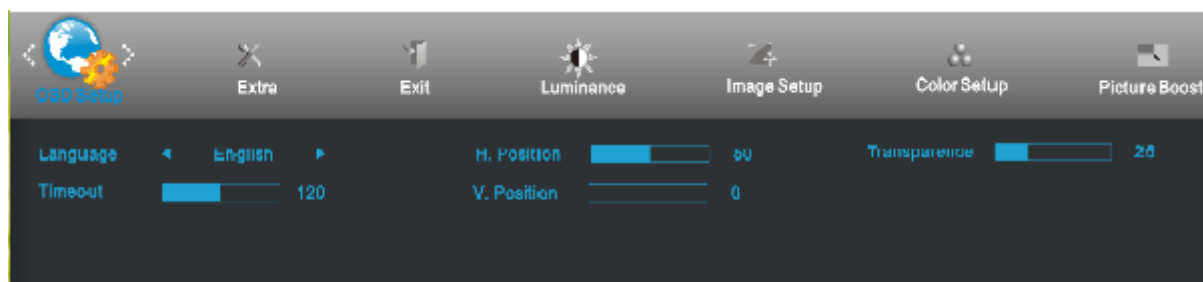
Picture Boost




- 1 Press **MENU** (Menu) to display menu.
- 2 Press < or > to select  (Picture Boost), and press **MENU** to enter.
- 3 Press < or > to select submenu, and press **MENU** to enter.
- 4 Press < or > to adjust.
- 5 Press **AUTO** to exit.

|  |              |           |                                  |
|--|--------------|-----------|----------------------------------|
|  | Frame Size   | 14-100    | Adjust Frame Size                |
|  | Brightness   | 0-100     | Adjust Frame Brightness          |
|  | Contrast     | 0-100     | Adjust Frame Contrast            |
|  | H. position  | 0-100     | Adjust Frame horizontal Position |
|  | V.position   | 0-100     | Adjust Frame vertical Position   |
|  | Bright Frame | on or off | Disable or Enable Bright Frame   |

## OSD Setup




1 Press **MENU** (Menu) to display menu.

2 Press < or > to select  (OSD Setup), and press **MENU** to enter.

3 Press < or > to select submenu, and press **MENU** to enter.

4 Press < or > to adjust.


5 Press **AUTO** to exit.

|  |              |       |                                       |
|--|--------------|-------|---------------------------------------|
|  | H.Position   | 0-100 | Adjust the horizontal position of OSD |
|  | V.Position   | 0-100 | Adjust the vertical position of OSD   |
|  | Timeout      | 5-120 | Adjust the OSD Timeout                |
|  | Transparence | 0-100 | Adjust the transparence of OSD        |
|  | Language     |       | Select the OSD language               |

## Extra




1 Press **MENU** (Menu) to display menu.

2 Press < or > to select  (Extra), and press **MENU** to enter.

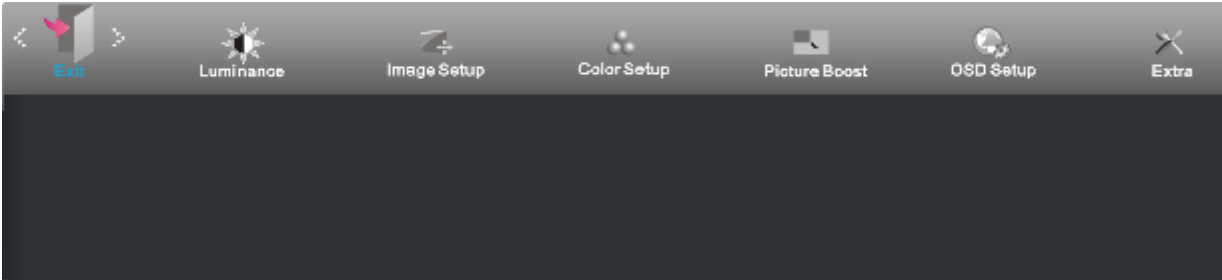
3 Press < or > to select submenu, and press **MENU** to enter.


4 Press < or > to adjust.

5 Press **AUTO** to exit.

|   |              |                            |  |
|---|--------------|----------------------------|--|
|  | Input Select | Auto / Analog / DVI / HDMI | Select input signal source. ( E2260PHU/E2260SHU/ E2460PWHU/E2460SWHU/E2460SHU/E2460PHU)                    |
|   | Input Select | Auto / Analog / DVI        | Select input signal source. (E960SRDA/ E960PRDA E2060SWDA/E2060PWD/ E2060SWd/ E2260SD/ E2260SDA/ E2260PDA) |
|   | Input Select | Analog                     | Select input signal source. (E2060Sw)  |
|   | Auto Config  | yes or no                  | Auto adjust the picture to default.  |
|   | Off timer    | 0-24hrs                    | Select DC off time.  |
|   | Image Ratio  | wide or 4:3                | Select wide or 4:3 format for display.   |
|   | DDC-CI       | yes or no                  | Turn ON/OFF DDC-CI Support.  |
|   | Reset        | yes or no                  | Reset the menu to default.   |
|   | Information  |                            | Show the information of the main image and sub-image source.   |



Exit



- 1 Press **MENU** (Menu) to display menu.
- 2 Press < or > to select  (Exit), and press **MENU** to enter.
- 3 Press < or > to select submenu, and press **MENU** to enter.
- 4 Press < or > to adjust.
- 5 Press **AUTO** to exit.

|   |      |  |                   |
|---|------|--|-------------------|
|  | Exit |  | Exit the main OSD |
|---|------|--|-------------------|

LED Indicator

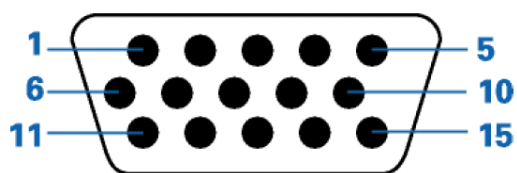
| Status          | LED Color     |   |
|-----------------|---------------|---|
| Full Power Mode | Green or Blue |  |
| Active-off Mode | Orange or red |  |



## 4. Input/Output Specification

### 4.1 Input Signal Connector

#### Pin Assignments



| Pin Number | 15-Pin Side of the Signal Cable |
|------------|---------------------------------|
| 1          | Video-Red                       |
| 2          | Video-Green                     |
| 3          | Video-Blue                      |
| 4          | N.C.                            |
| 5          | Detect Cable                    |
| 6          | GND-R                           |
| 7          | GND-G                           |
| 8          | GND-B                           |
| 9          | +5V                             |
| 10         | Ground                          |
| 11         | N.C.                            |
| 12         | DDC-Serial data                 |
| 13         | H-sync                          |
| 14         | V-sync                          |
| 15         | DDC-Serial clock                |

## 4.2 Factory Preset Display Modes

| STAND    | RESOLUTION     | HORIZONTAL<br>FREQUENCY(kHZ) | VERTICAL<br>FREQUENCY(Hz) |
|----------|----------------|------------------------------|---------------------------|
| VGA      | 640×480 @60Hz  | 31.469                       | 59.940                    |
| VGA      | 640×480 @67Hz  | 35.000                       | 66.667                    |
| VGA      | 640×480 @72Hz  | 37.861                       | 72.809                    |
| VGA      | 640×480 @75Hz  | 37.500                       | 75.000                    |
| Dos-mode | 720×400 @70Hz  | 31.469                       | 70.087                    |
| SVGA     | 800×600 @56Hz  | 35.156                       | 56.250                    |
| SVGA     | 800×600 @60Hz  | 37.879                       | 60.317                    |
| SVGA     | 800×600 @72Hz  | 48.077                       | 72.188                    |
| SVGA     | 800×600@75Hz   | 46.875                       | 75.000                    |
| SVGA     | 832×624 @75Hz  | 49.725                       | 74.500                    |
| XGA      | 1024×768 @60Hz | 48.363                       | 60.004                    |
| XGA      | 1024×768 @70Hz | 56.476                       | 70.069                    |
| XGA      | 1024×768 @75Hz | 60.023                       | 75.029                    |
| SXGA     | 1280×1024@60Hz | 63.981                       | 60.020                    |
| SXGA     | 1280×1024@75Hz | 79.976                       | 75.025                    |
| WSXGA    | 1600×900 @60Hz | 55.540                       | 59.978                    |

## 4.3 Panel Specification

### 4.3.1 General Features

M195FGE-L20 is a 19.5" TFT Liquid Crystal Display module with WLED Backlight unit and 30 pins 2ch-LVDS interface. This module supports 1600 x 900 HD+ mode and can display up to 16.7M colors. The converter module for Backlight is not built in.

### 4.3.2 Display Characteristics

| Item                         | Specification   | Unit  |
|------------------------------|---|-------|
| Screen Size                  | 19.5" real diagonal   |       |
| Driver Element               | a-si TFT active matrix  | -     |
| Pixel Number                 | 1600 x R.G.B. x 900   | pixel |
| Pixel Pitch                  | 0.27 (H) x 0.27 (V)   | mm    |
| Pixel Arrangement            | RGB vertical stripe   | -     |
| Display Colors               | 16.7M   | color |
| Transmissive Mode            | Normally white  | -     |
| Surface Treatment            | AG type, 3H hard coating, Haze 25                             | -     |
| Luminance, White             | 250   | Cd/m2 |
| Color Gamut                  | 72% of NTSC(Typ.)   | -     |
| ROHS, Halogen Free & TCO 5.2 | ROHS, Halogen Free TCO 5.2 compliance                         |       |
| Power Consumption            | Total 14.154 W (Max.) @ cell 3.75 W (Max.), BL 10.404 W(Max.) |       |

| Item        |                | Min.   | Typ.   | Max.   | Unit |
|-------------|----------------|--------|--------|--------|------|
| Module Size | Horizontal (H) | 451.5  | 452.0  | 452.5  | mm   |
|             | Vertical (V)   | 262.5  | 263.0  | 263.5  | mm   |
|             | Thickness (T)  | -      | 10.5   | 11     | mm   |
| Bezel Area  | Horizontal     | 434.8  | 435.3  | 435.8  | mm   |
|             | Vertical       | 242.56 | 243.06 | 243.56 | mm   |
| Active Area | Horizontal     | -      | 432.0  | -      | mm   |
|             | Vertical       | -      | 239.76 | -      | mm   |
| Weight      |                | -      | 1430   | 1500   | g    |

### 4.3.3 Electrical Characteristics

TFT LCD MODULE

Vcc = 5.0 V, Ta = 25 ± 2 °C, Fr = 75Hz

| Parameter                       |                 | Symbol            | Value |      |      | Unit |
|---------------------------------|-----------------|-------------------|-------|------|------|------|
|                                 |                 |                   | Min.  | Typ. | Max. |      |
| Power Supply Voltage            |                 | V <sub>CC</sub>   | 4.5   | 5    | 5.5  | V    |
| Ripple Voltage                  |                 | V <sub>RP</sub>   | -     | -    | 300  | mV   |
| Rush Current                    |                 | I <sub>RUSH</sub> | -     | -    | 3    | A    |
| Power Supply Current            | White           |                   |       | 0.5  | 0.6  | A    |
|                                 | Black           |                   |       | 0.65 | 0.75 | A    |
|                                 | Vertical Stripe |                   |       | 0.65 | 0.75 | A    |
| Power Consumption               |                 | PLCD              |       |      |      | Watt |
| LVDS differential input voltage |                 | V <sub>id</sub>   | 100   | -    | 600  | mV   |
| LVDS common input voltage       |                 | V <sub>ic</sub>   | 1.0   | 1.2  | 1.4  | V    |
| Logic High Input Voltage        |                 | V <sub>IH</sub>   | -     | -    | 0.1  | V    |
| Logic Low Input Voltage         |                 | V <sub>IL</sub>   | -0.1  | -    |      | V    |

#### Back Light Unit

T<sub>a</sub> = 25 ± 2.°C

| Parameter                                 | Symbol           | Value |      |      | Unit | Note   |
|---|------------------|-------|------|------|------|--|
|   |                  | Min.  | Typ. | Max. |      |  |
| LED Light Bar Input Voltage Per Input Pin | V <sub>PIN</sub> | ---   | 31   | 34   | V    | (1),<br>Duty=100%,<br>I <sub>PIN</sub> =80mA |
| LED Light Bar Current Per Input Pin       | I <sub>PIN</sub> |       | 65   | 69   | mA   | (1), (2)<br>Duty=100%                        |
| LED Life Time                             | L <sub>LED</sub> | 50000 |      |      | Hrs  | (3)  |
| Power Consumption                         | P <sub>BL</sub>  | ---   | 8.06 | 8.84 | W    | (1)<br>Duty=100%,<br>I <sub>PIN</sub> =80A   |

#### 4.3.4 Optical Characteristics

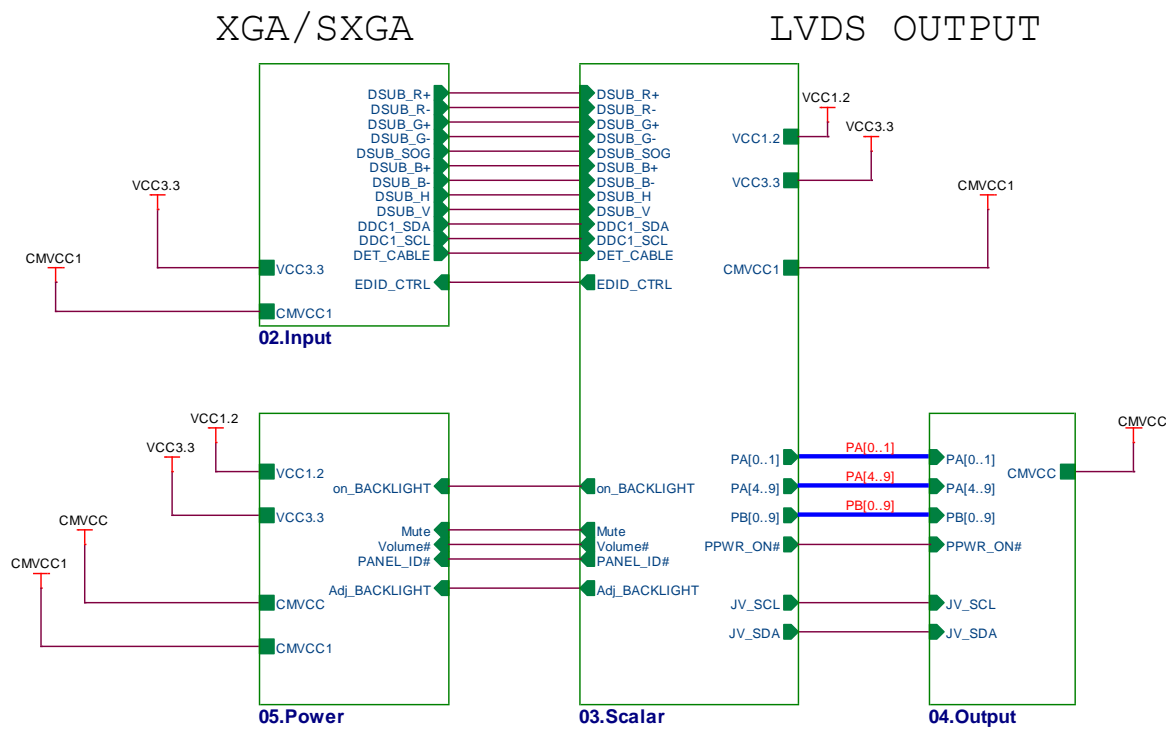
| Item   |            | Symbol                      | Condition  | Min.       | Typ.  | Max.       | Unit              |
|--|------------|-----------------------------|--|------------|-------|------------|-------------------|
| Color Chromaticity (CIE 1931)                | Red        | R <sub>x</sub>              | $\theta_x=0^\circ, \theta_Y=0^\circ$<br>CS-2000<br>R=G=B=255<br>Gray scale | Typ – 0.03 | 0.641 | Typ + 0.03 | -                 |
|  |            | R <sub>y</sub>              |  |            | 0.338 |            |                   |
|  | Green      | G <sub>x</sub>              |  |            | 0.315 |            |                   |
|  |            | G <sub>y</sub>              |  |            | 0.629 |            |                   |
|  | Blue       | B <sub>x</sub>              |  |            | 0.159 |            |                   |
|  |            | B <sub>y</sub>              |  |            | 0.059 |            |                   |
|  | White      | W <sub>x</sub>              |  |            | 0.313 |            |                   |
|  |            | W <sub>y</sub>              |  |            | 0.329 |            |                   |
| Center Luminance of White (Center of Screen) |            | L <sub>C</sub>              |  | 200        | 250   | -          | cd/m <sup>2</sup> |
| Contrast Ratio                               |            | CR                          |  | 700        | 1000  | -          | -                 |
| Response Time                                |            | T <sub>R</sub>              | $\theta_x=0^\circ, \theta_Y=0^\circ$                                       | -          | 1.5   | 2.5        | ms                |
|  |            | T <sub>F</sub>              |  | -          | 3.5   | 5.5        |                   |
| White Variation                              |            | W                           | x=0, y=0   | 75         | -     | -          | %                 |
| Viewing Angle                                | Horizontal | $\theta_{x-} + \theta_{x+}$ | CR ≥ 10  | 150        | 170   | -          | Deg.              |
|  | Vertical   | $\theta_{y-} + \theta_{y+}$ |  | 140        | 160   | -          |                   |
| Viewing Angle                                | Horizontal | $\theta_{x-} + \theta_{x+}$ | CR ≥ 5   | 160        | 178   | ---        | Deg.              |
|  | Vertical   | $\theta_{y-} + \theta_{y+}$ |  | 150        | 170   | ---        |                   |

5. Block Diagram

5.1 Main Board

715G5265M01000004I

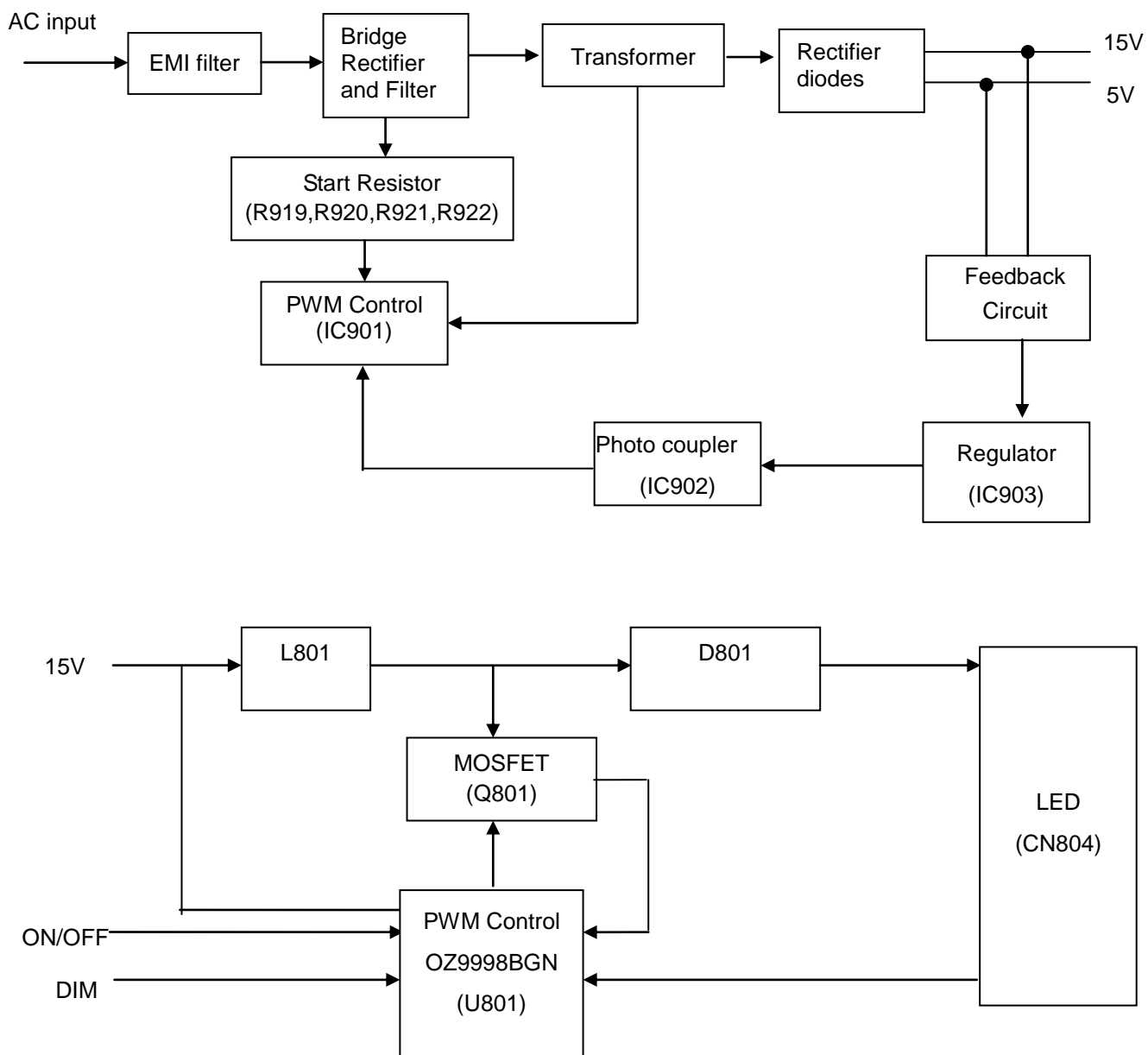
TSUMU18TR6 SCHEMATIC



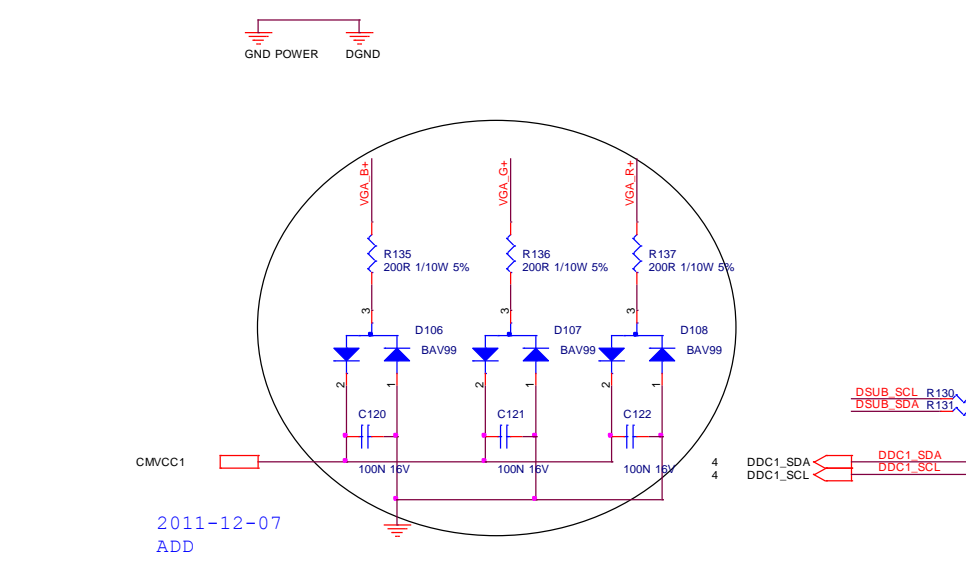
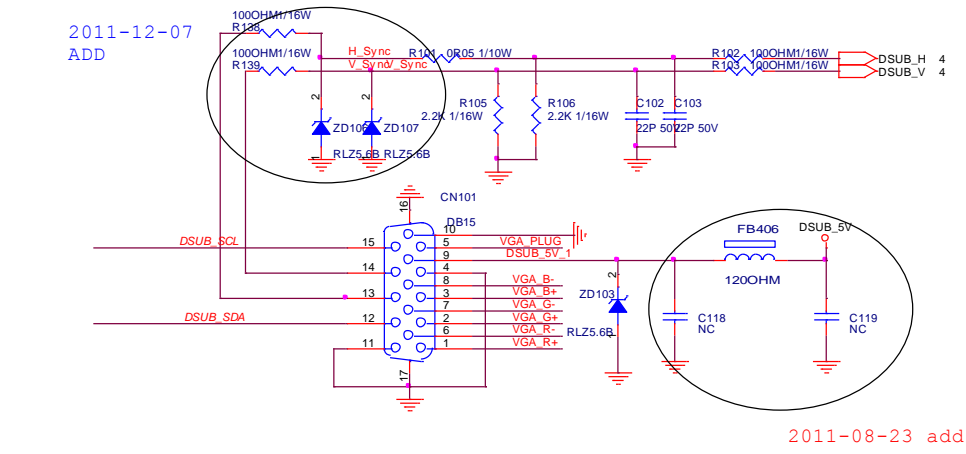
|   |                              |           |                        |       |
|---|------------------------------|-----------|------------------------|-------|
| TPV (Top Victory Electronics Co., Ltd.) | OEM MODEL                    | e960Swn   | Size                   | A     |
| 结 隔 瓜 铜 膜                               | G5265-MOB-000-AOC-1-111022   | TPV MODEL | Rev                    | F     |
| Key Component                           | 01.Top                       | PCB NAME  | 715GG5265-MOB-000-004K | 称 爹   |
| Date                                    | Thursday, September 08, 2011 | Sheet     | 2 of 6                 | <称 爹> |

## 5.2 Power Board

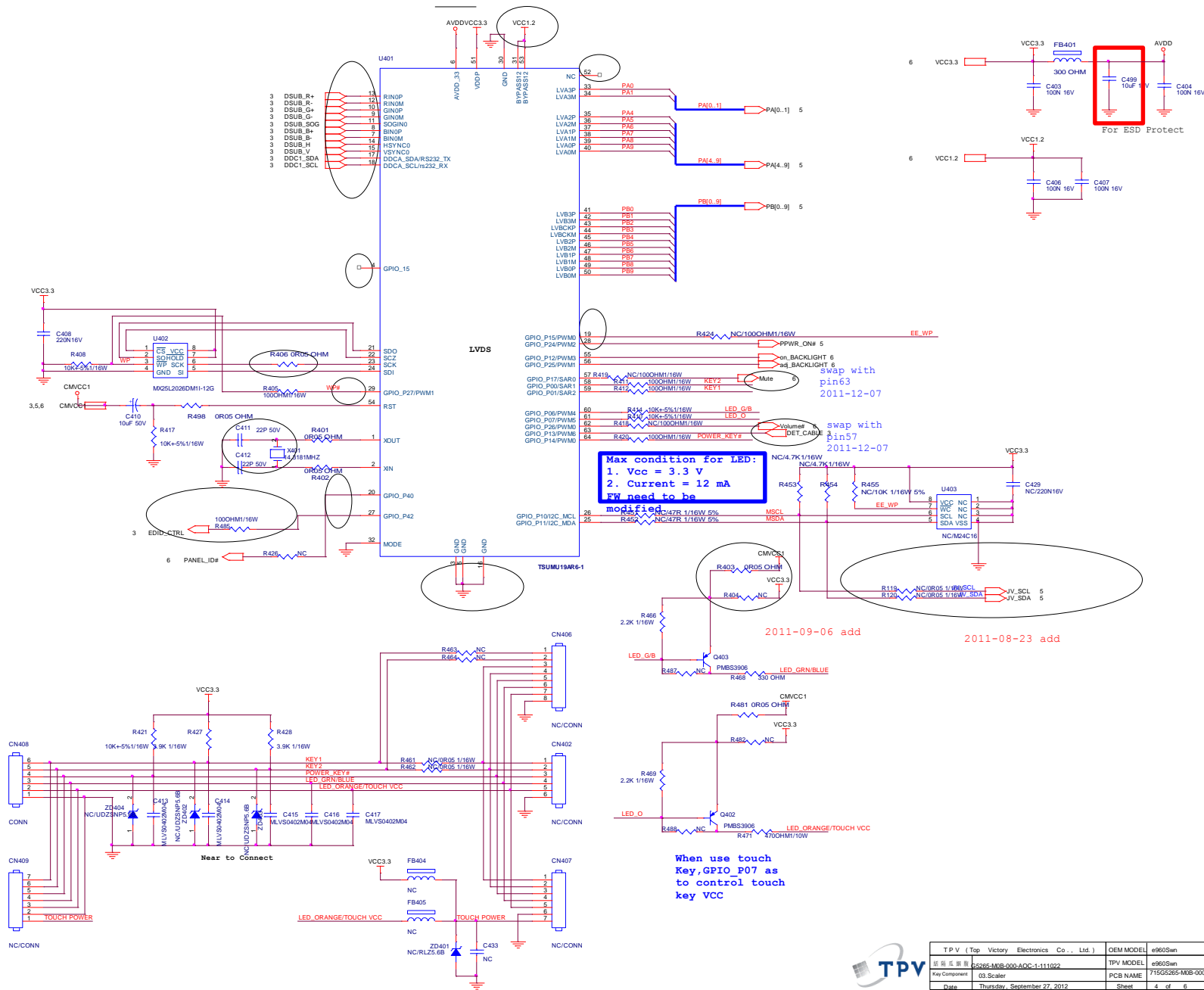
715G4452P02002001M



6. Schematic  
6.1 Main Board  
715G5265M01000004I

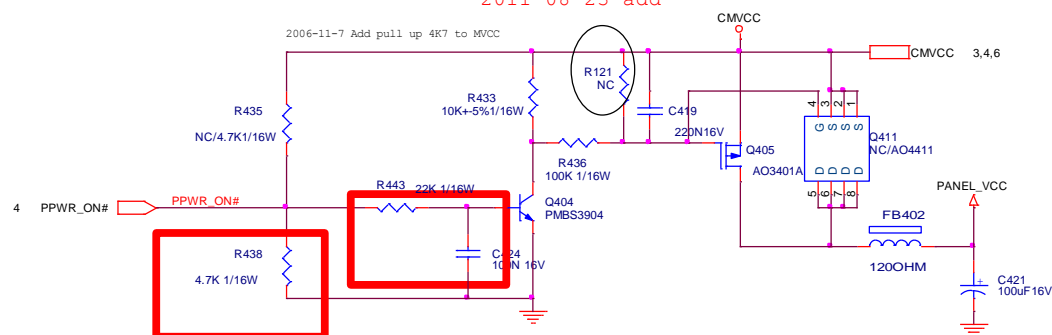
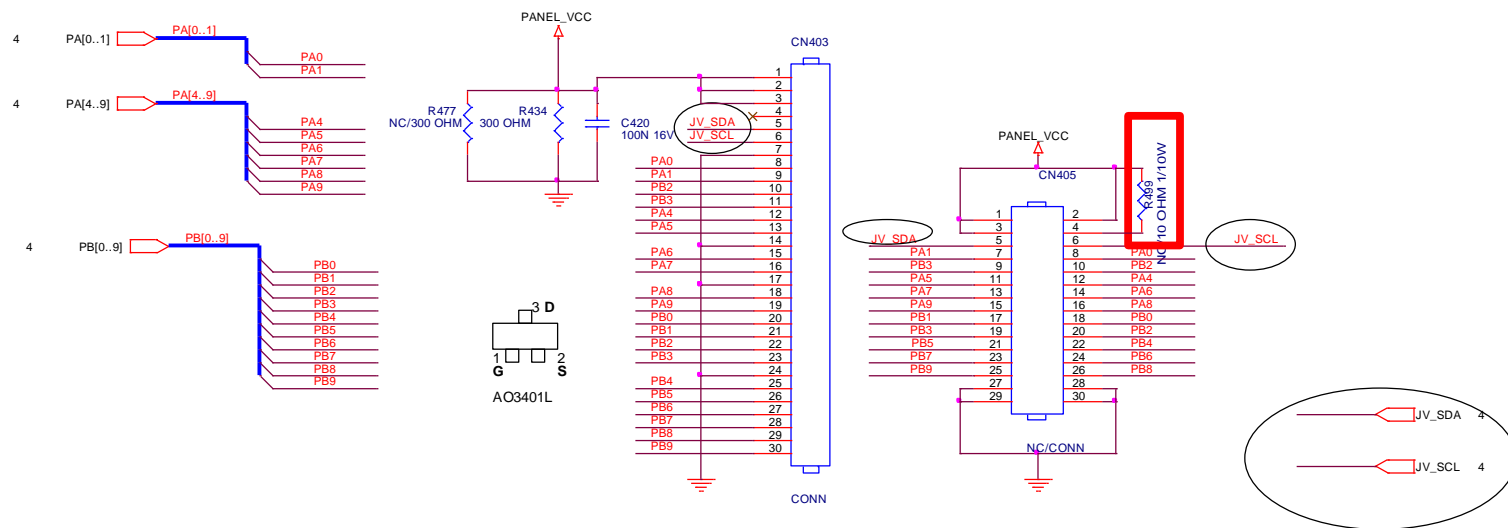


|   |                            |           |                       |      |
|---|----------------------------|-----------|-----------------------|------|
| TPV (Top Victory Electronics Co., Ltd.) | OEM MODEL                  | e960Swn   | Size                  | B    |
| Key Component                           | GS265-M0B-000-A0C-1-111022 | TPV MODEL | e960Swn               | Rev  |
| Date                                    | Tuesday, January 10, 2012  | PCB NAME  | 715G5265-M0B-000-004K | 称参   |
|   |                            | Sheet     | 3 of 6                | <称参> |

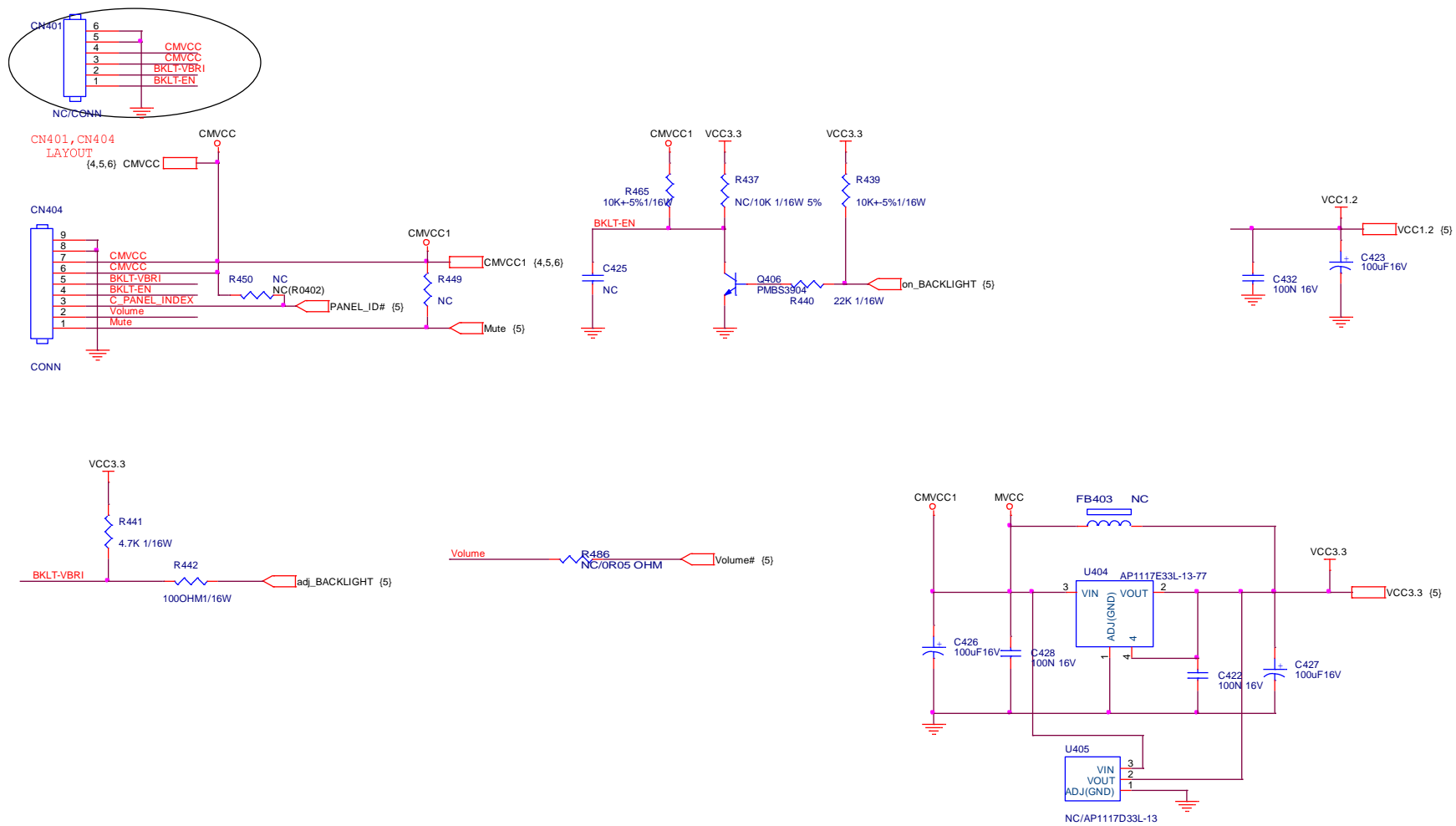


|   |                              |          |                      |     |
|---|------------------------------|----------|----------------------|-----|
| TPV (Top Victory Electronics Co., Ltd.) | OEM MODEL                    | e9605en  | Size                 | C   |
| TPV MODEL                               | e9605en                      | Rev      | F                    |     |
| Key Component                           | 03_Scaler                    | PCB NAME | 715G5265-MB-000-004K | Rev |
| Date                                    | Thursday, September 27, 2012 | Sheet    | 4 of 6               | Rev |





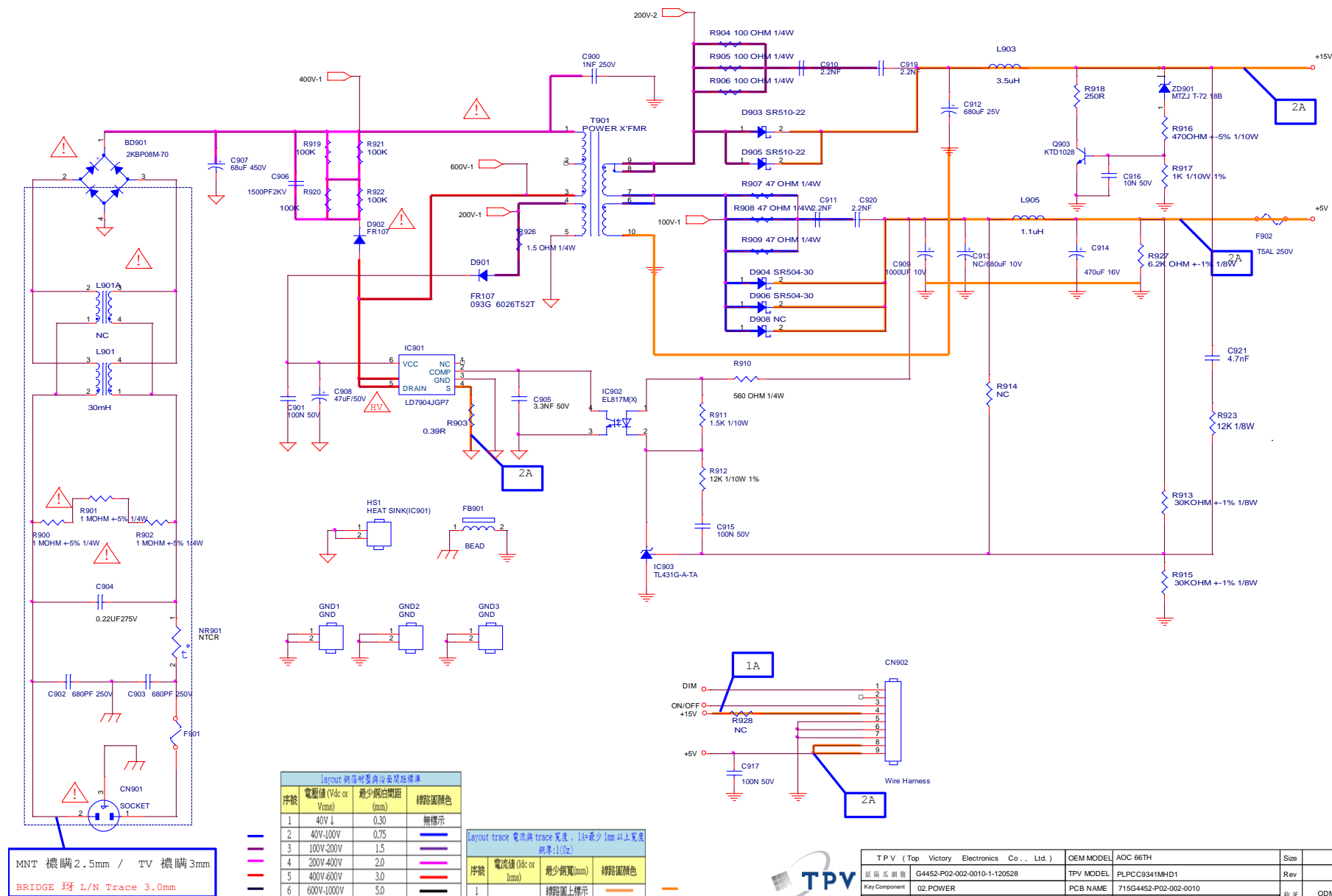
|   |                            |           |                       |      |
|---|----------------------------|-----------|-----------------------|------|
| TPV (Top Victory Electronics Co., Ltd.) | OEM MODEL                  | e960Swn   | Size                  | B    |
| 紙隔瓜銅版                                   | GS265-M0B-000-A0C-1-111022 | TPV MODEL | Rev                   | F    |
| Key Component                           | 04.Output                  | PCB NAME  | 715GS265-M0B-000-004K | 稱重   |
| Date                                    | Thursday, October 27, 2011 | Sheet     | 5 of 6                | <稱重> |

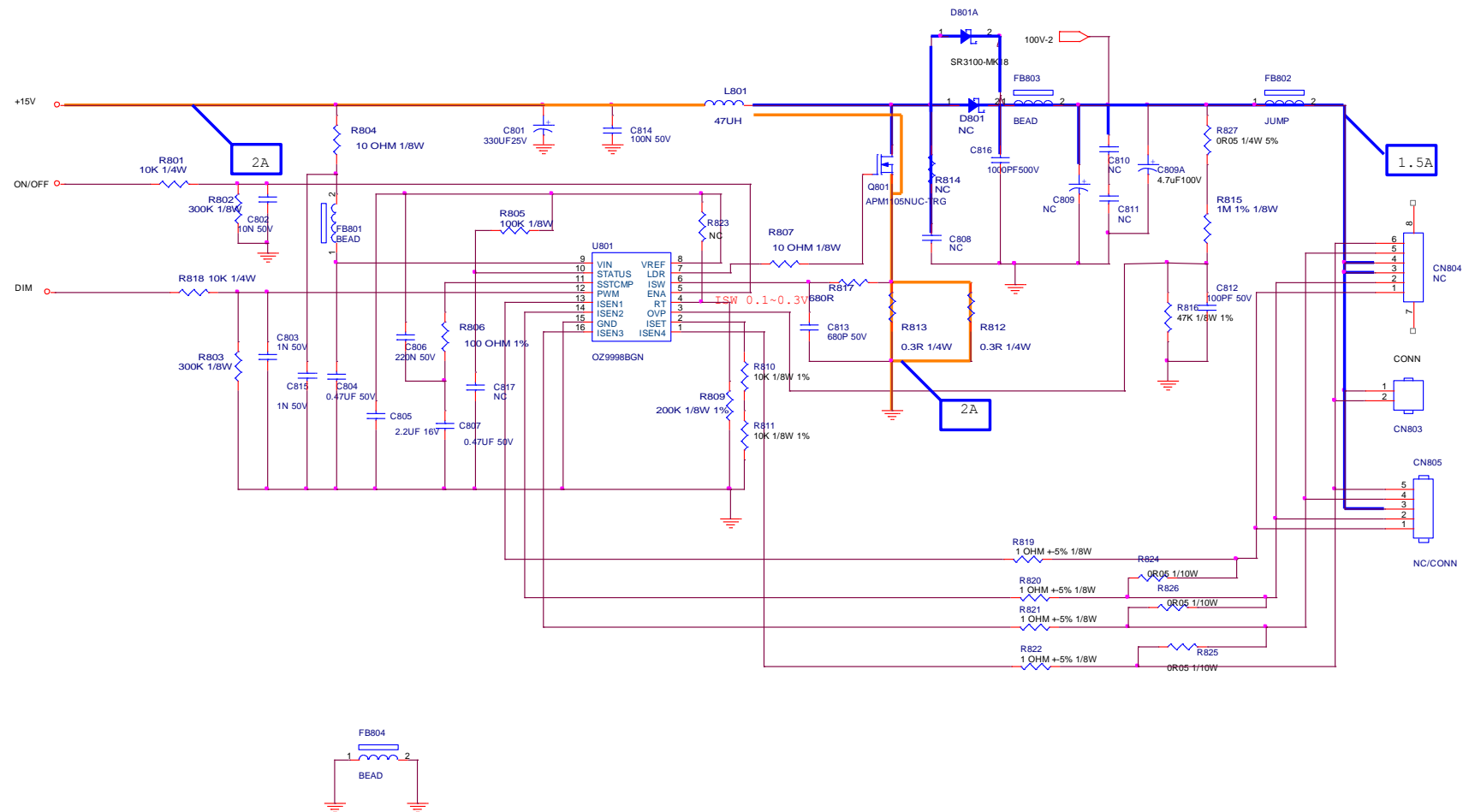


|   |                            |           |                       |     |
|---|----------------------------|-----------|-----------------------|-----|
| TPV (Top Victory Electronics Co., Ltd.) | OEM MODEL                  | e960Swn   | Size                  | B   |
| 結構爪銅腹                                   | G5265-M0B-000-A0C-1-111022 | TPV MODEL | e960Swn               | Rev |
| Key Component                           | 05.Power                   | PCB NAME  | 715G5265-M0B-000-004K | Rev |
| Date                                    | Saturday, October 22, 2011 | Sheet     | 6 of 6                | Rev |

## 6.2 Power Board

### 715G4452P02002001M





| layout 銅箔厚度與箔面殘留標準 |                   |             |       |
|--------------------|-------------------|-------------|-------|
| 序號                 | 電壓值 (Vdc or Vrms) | 最少銅箔間距 (mm) | 線路圖顏色 |
| 1                  | 40V-100V          | 0.30        | 無標示   |
| 2                  | 40V-100V          | 0.75        | 藍色    |
| 3                  | 100V-200V         | 1.5         | 紫色    |
| 4                  | 200V-400V         | 2.0         | 粉紅色   |
| 5                  | 400V-600V         | 3.0         | 紅色    |
| 6                  | 600V-1000V        | 5.0         | 黑色    |

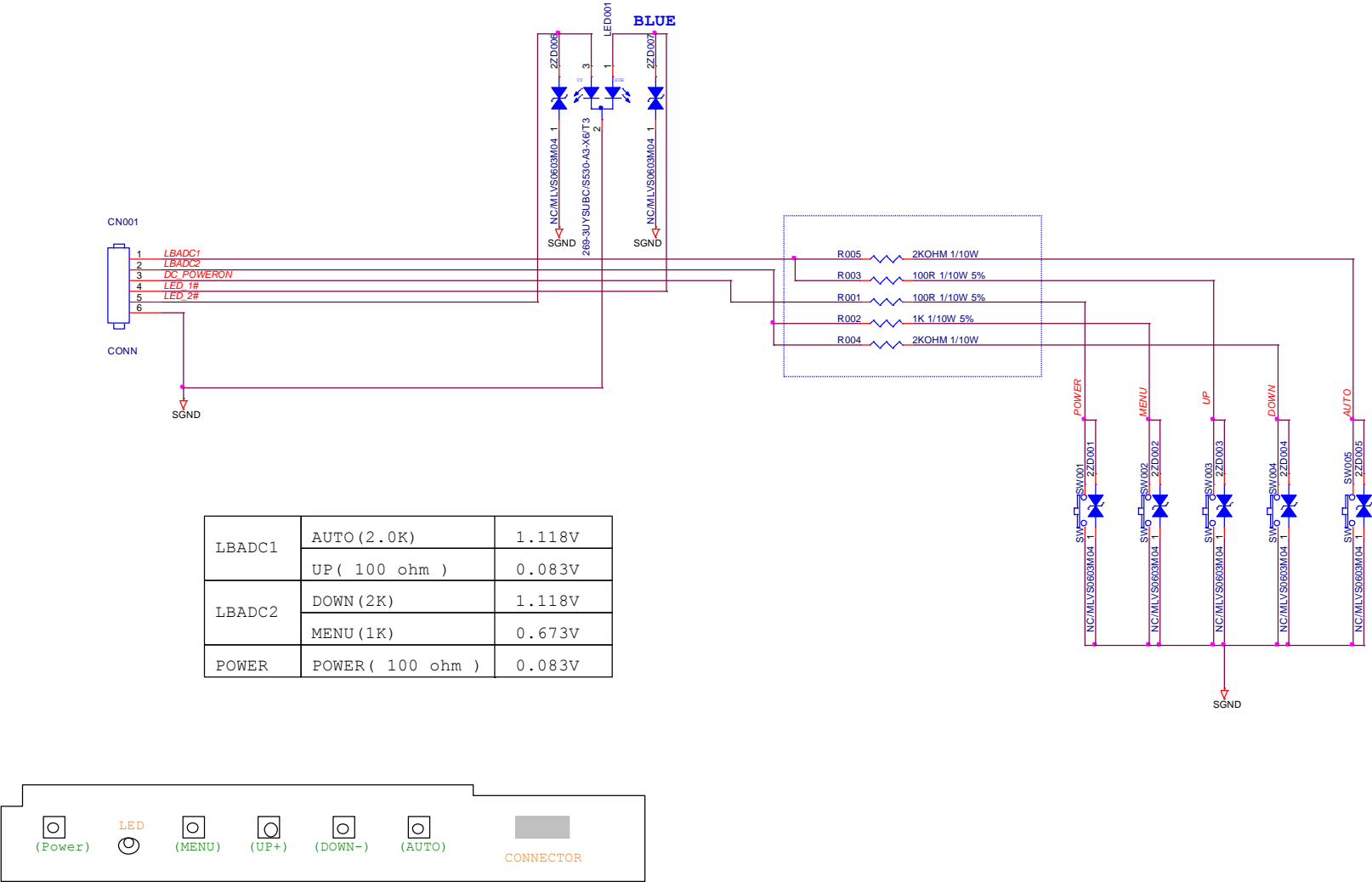
| Layout trace 電流與 trace 寬度, 1A=最少 1mm 以上寬度 銅厚: 1.0oz |                 |          |       |
|---|-----------------|----------|-------|
| 序號  | 電流值 (dc or rms) | 最少銅寬(mm) | 線路圖顏色 |
| 1   | 線路圖上標示          |          | 藍色    |



|   |                             |           |                       |           |
|---|-----------------------------|-----------|-----------------------|-----------|
| T P V (Top Victory Electronics Co., Ltd.) | OEM MODEL                   | AOC 66TH  | Size                  | Custom    |
| 話隔瓜網版                                     | G4452-P02-002-0010-1-120528 | TPV MODEL | PLPCC9341MHD1         | Rev       |
| Key Component                             | 03.CONVERTER                | PCB NAME  | 715G4452-P02-002-0010 | ODM MODEL |
| Date                                      | Friday, June 08, 2012       | Sheet     | 3 of 3                |           |

6.3 Key Board

715G5357K03000001M

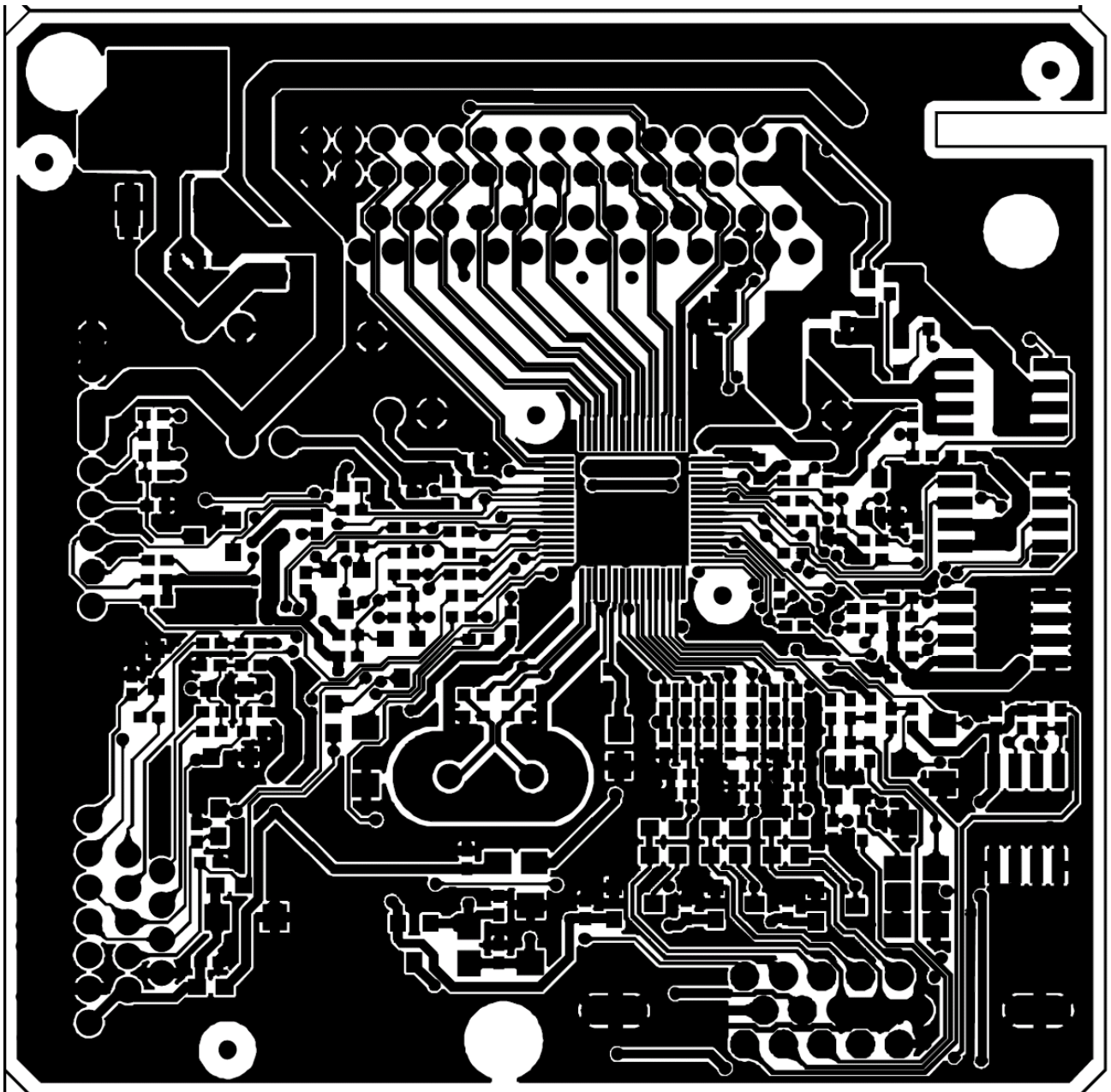


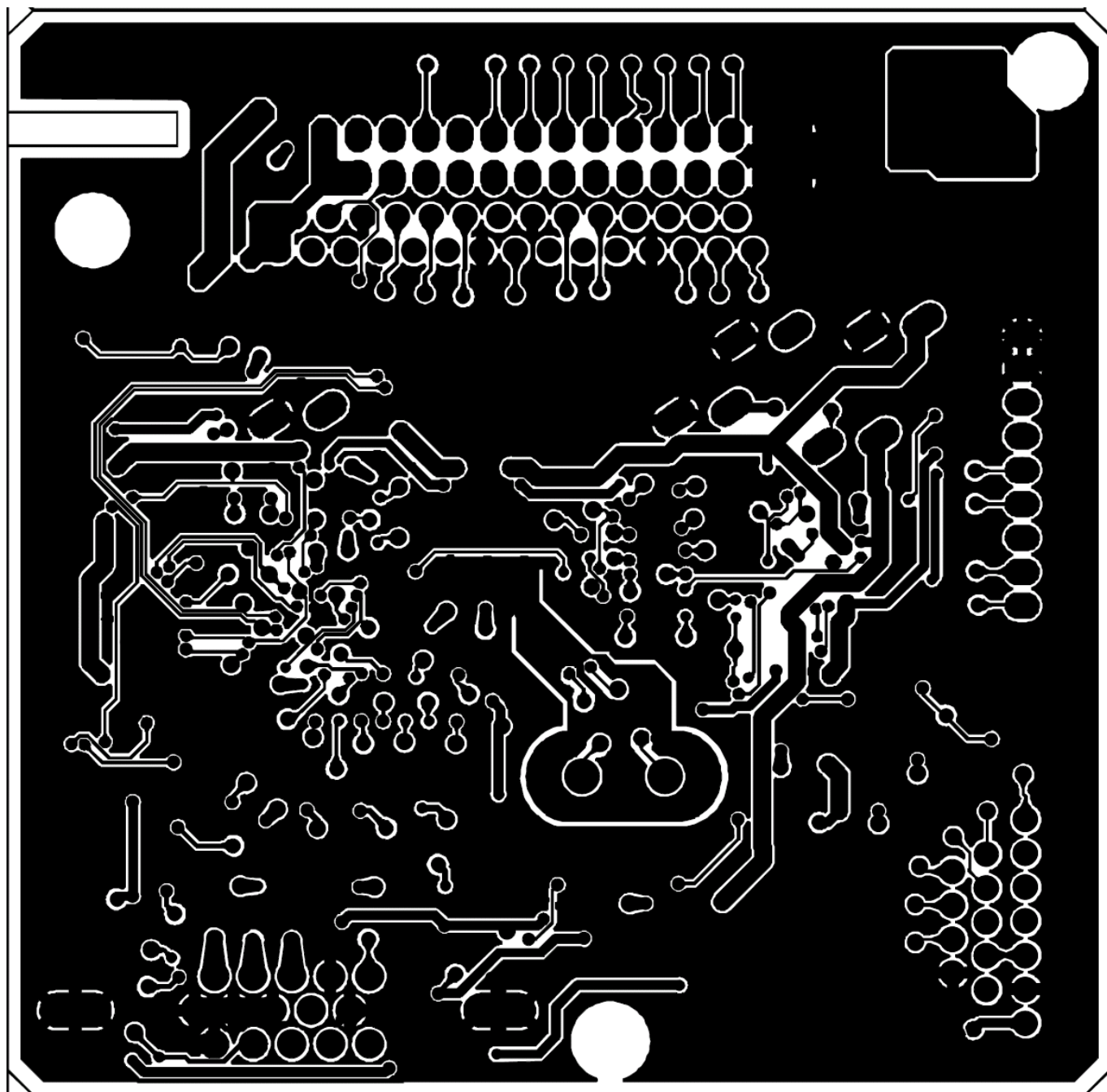
|   |                           |           |                       |      |
|---|---------------------------|-----------|-----------------------|------|
| TPV (Top Victory Electronics Co., Ltd.) | OEM MODEL                 | AOC       | Size                  | B    |
| 結構爪銀版                                   | G5357-K0D-000-0010        | TPV MODEL | Rev                   | D    |
| Key Component                           | 2.0.key                   | PCB NAME  | 715G5357-K0D-000-0010 | 称差   |
| Date                                    | Tuesday, January 17, 2012 | Sheet     | 1 of 2                | <称差> |

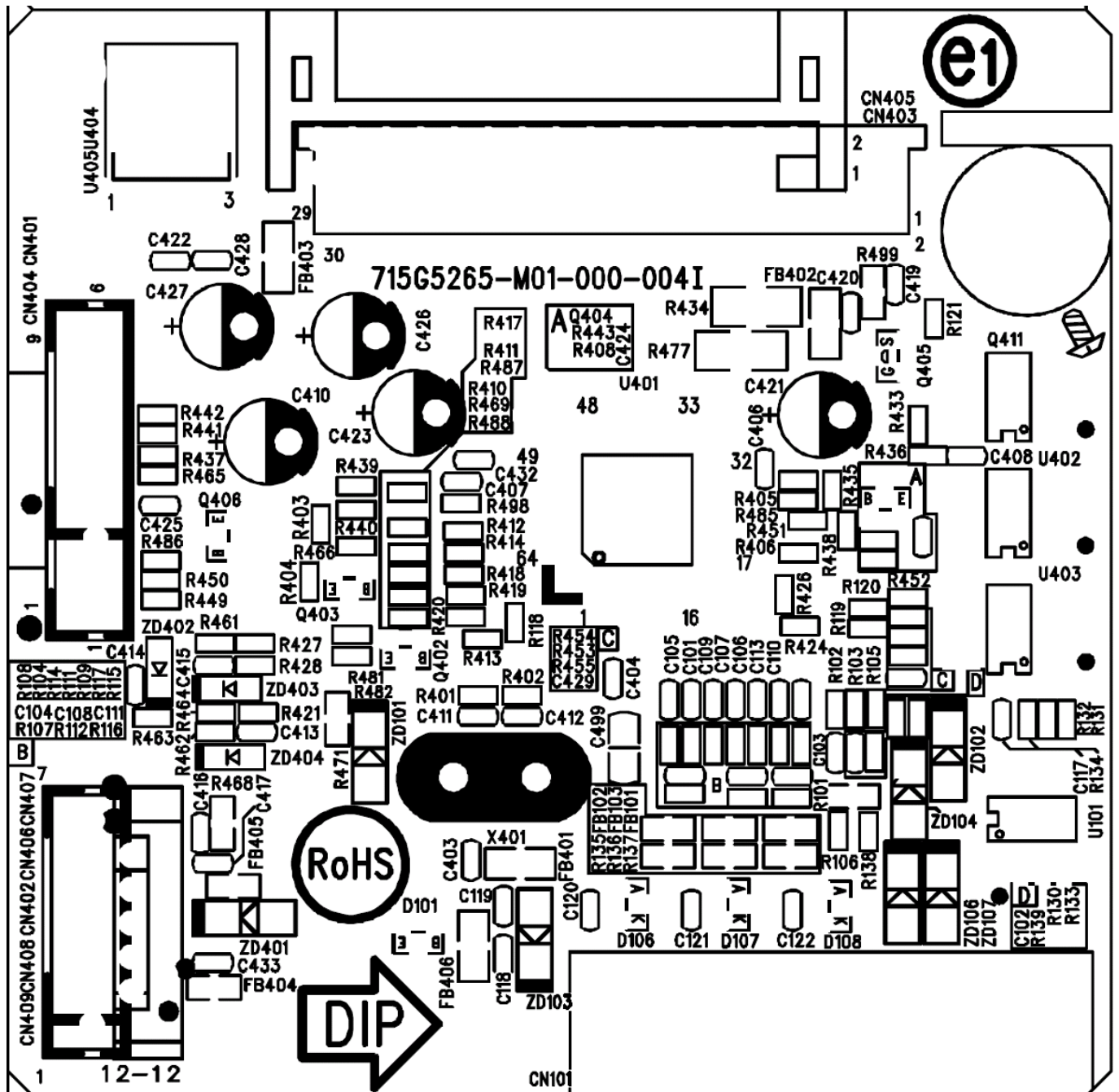
## 7. PCB Layout

### 7.1 Main Board

715G5265M01000004I



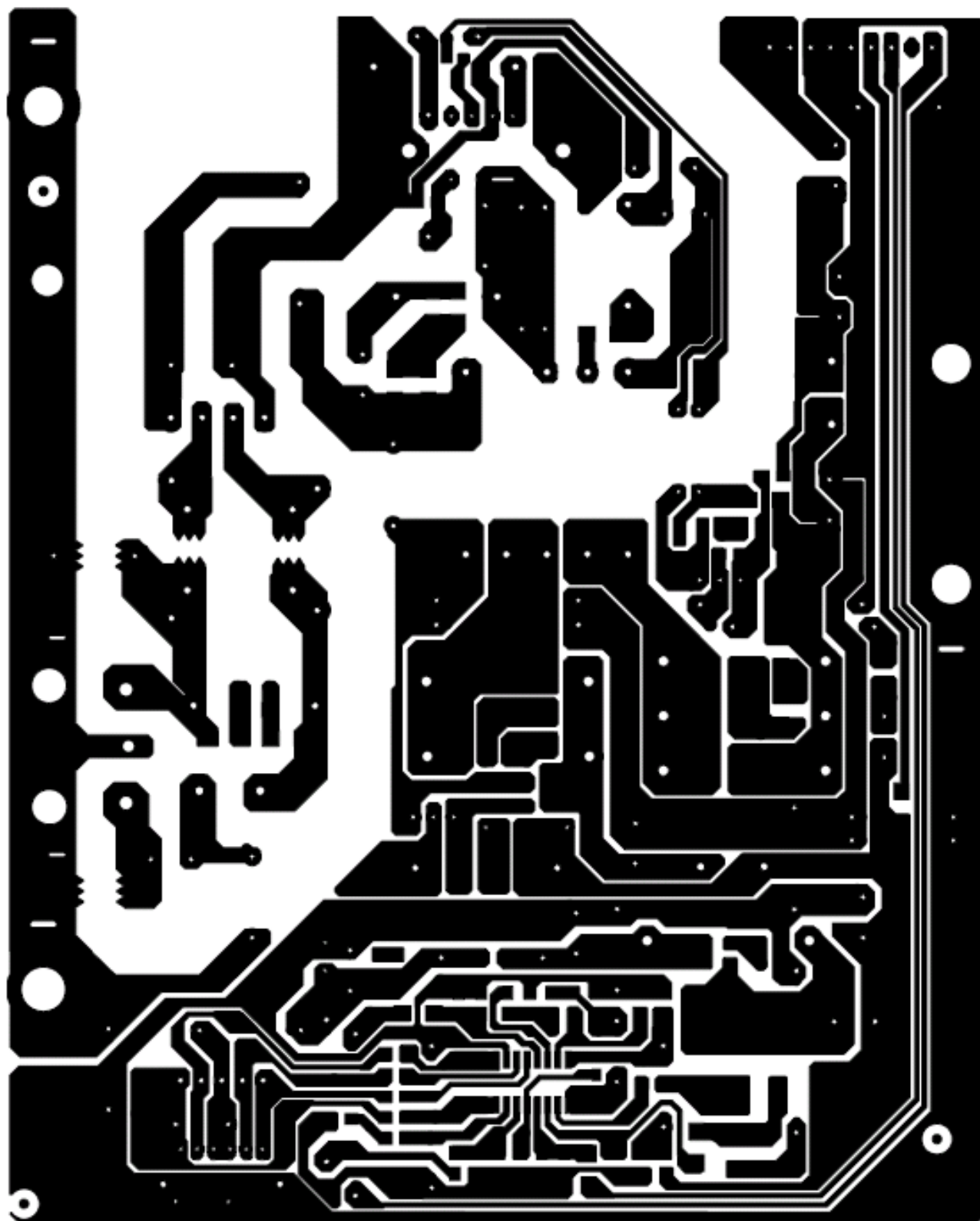






## 7.2 Power Board

715G4452P02002001M

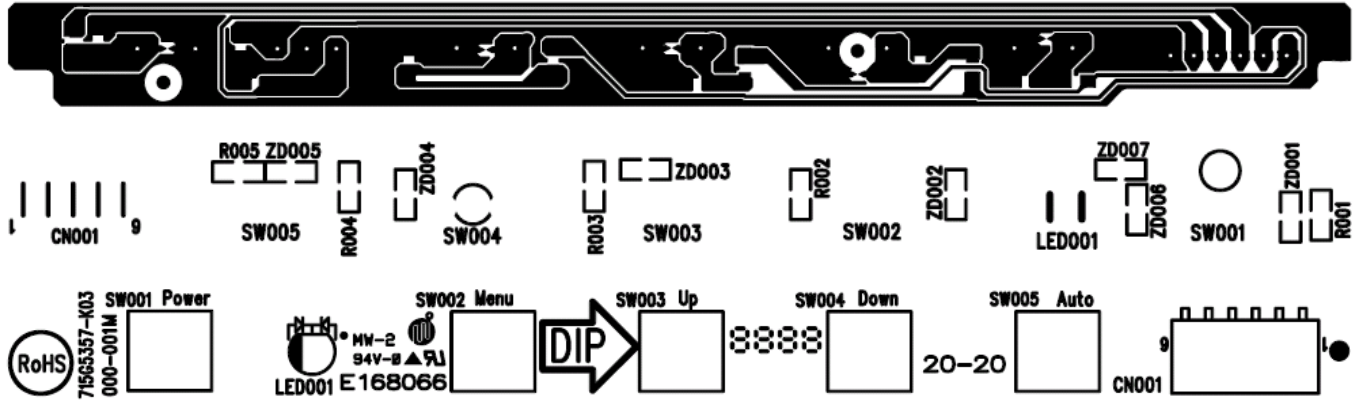






## 7.3 Key Board

715G5357K03000001M



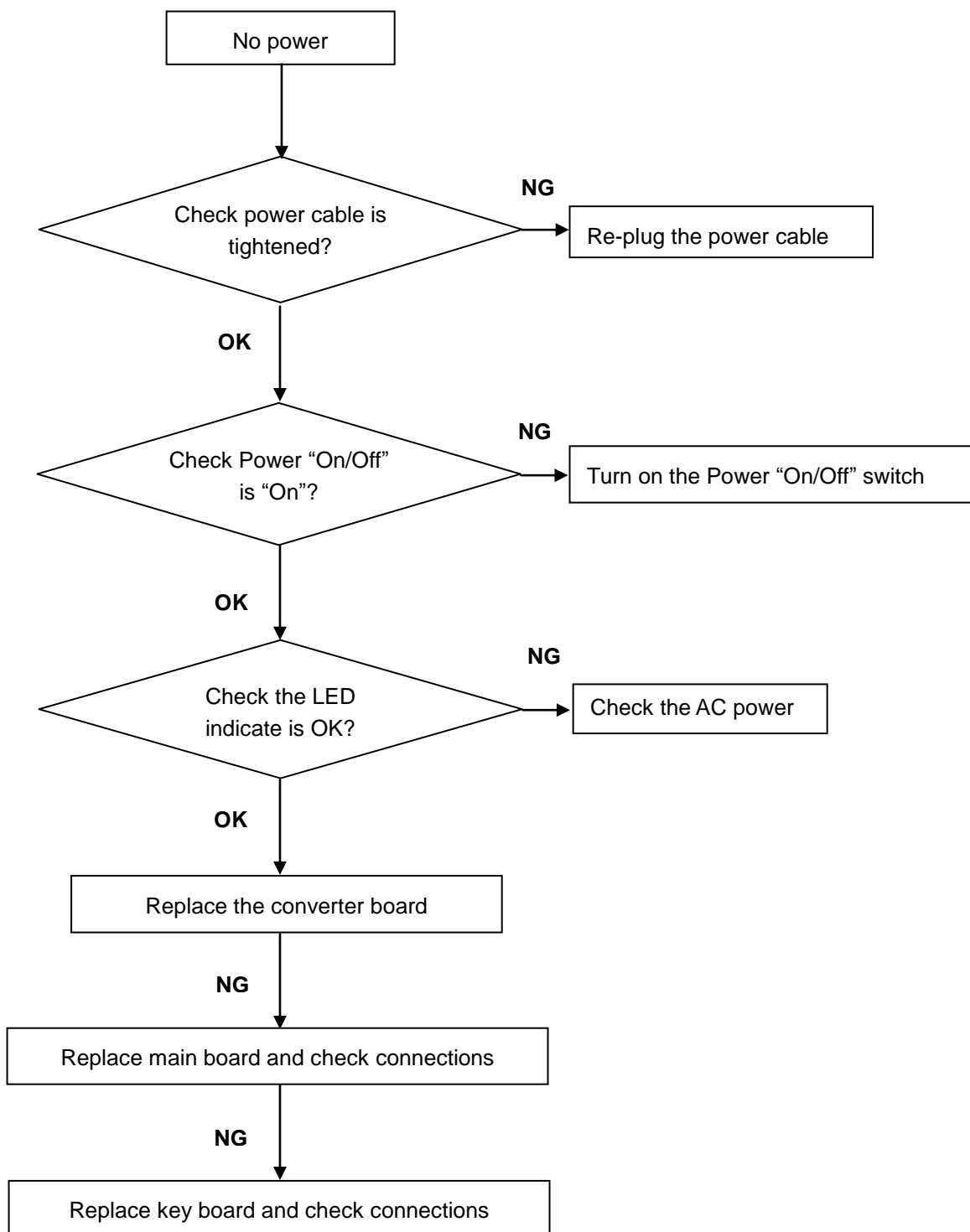
## **8. Maintainability**

### **8.1 Equipments and Tools Requirement**

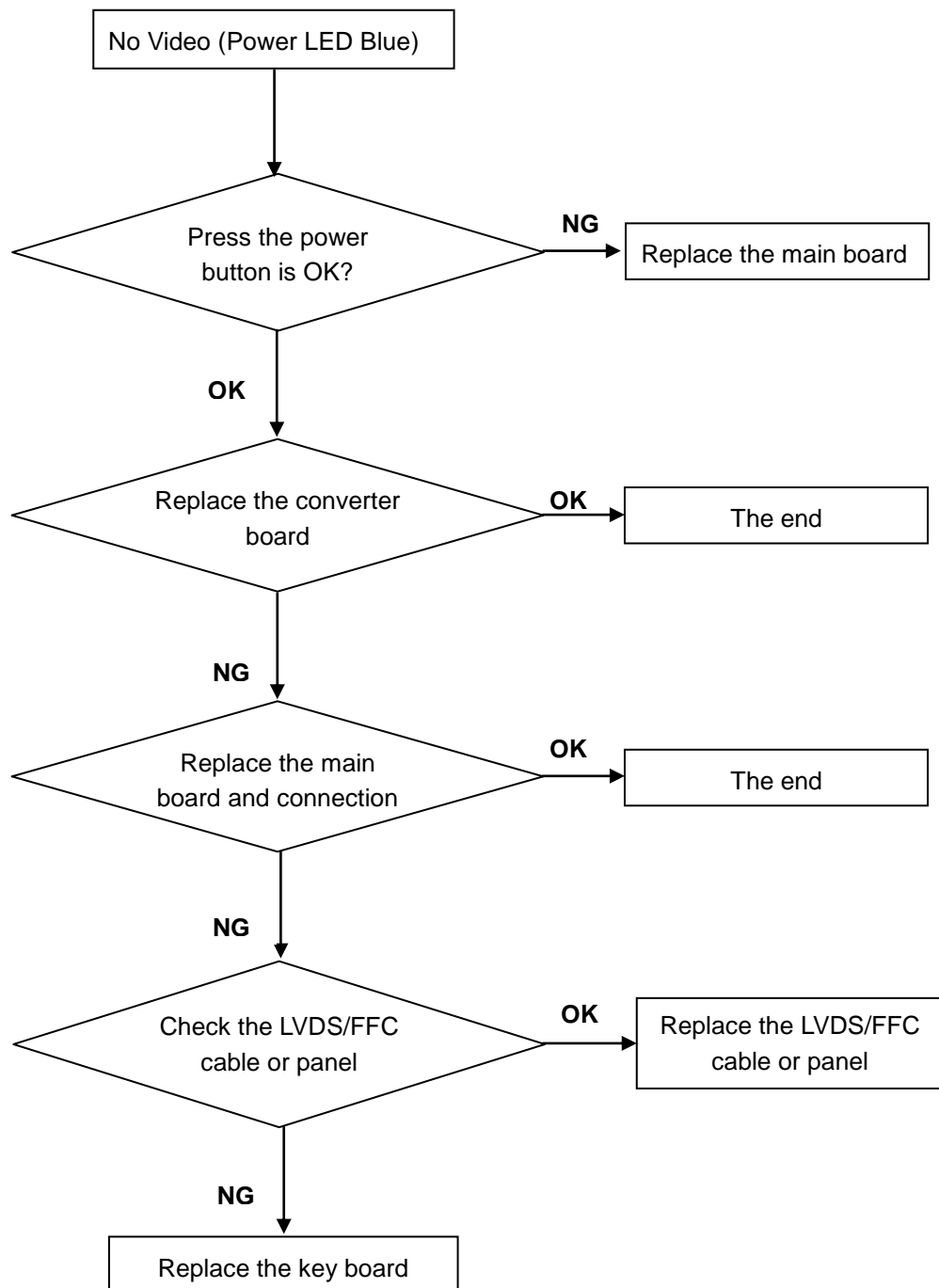
1. Voltmeter.
2. Oscilloscope.
3. Pattern Generator.
4. DDC Tool with an IBM Compatible Computer.
5. Alignment Tool.
6. LCD Color Analyzer.
7. Service Manual.
8. User Manual.

## 8.2 Trouble Shooting

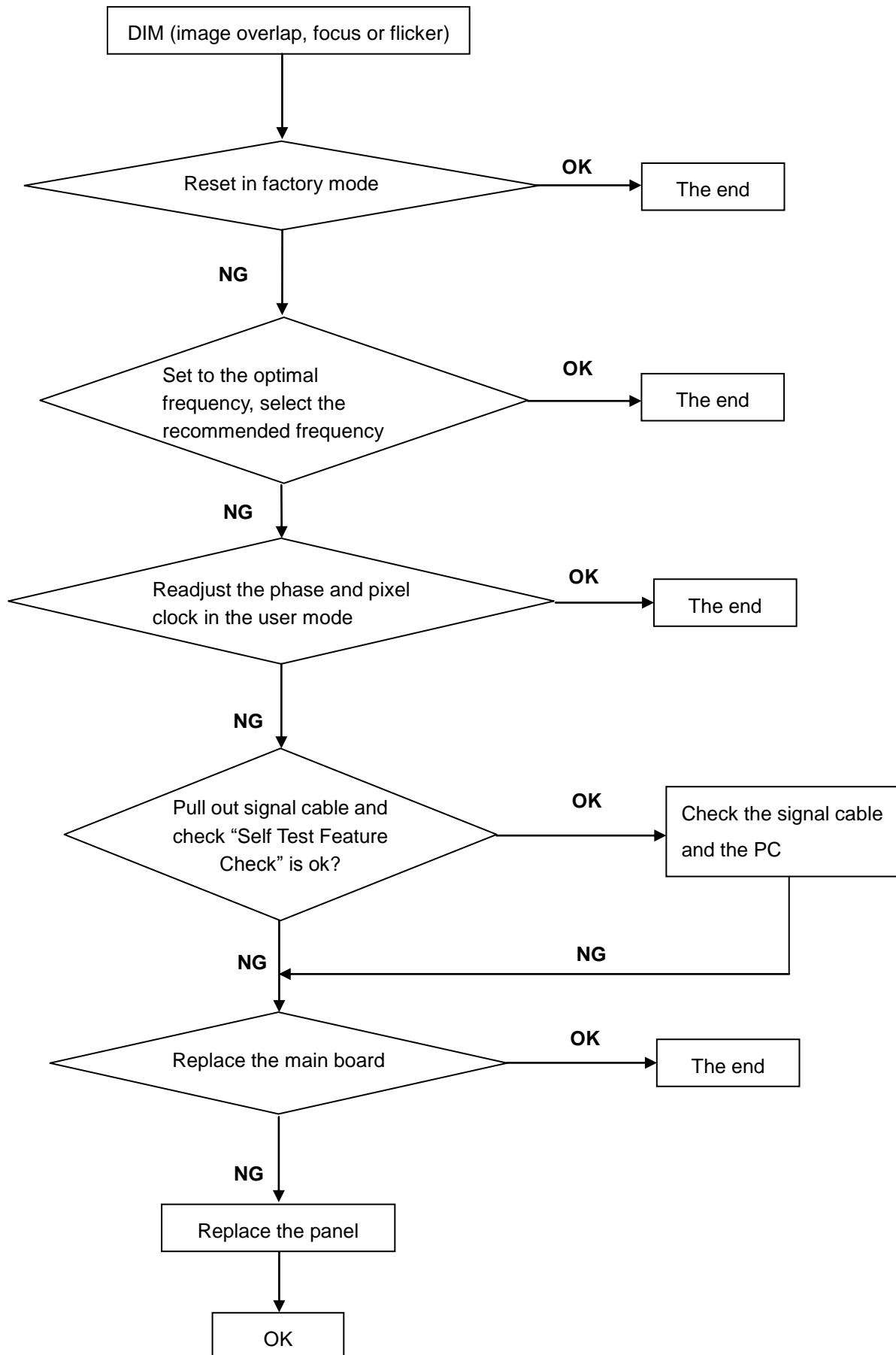
### 1. No Power



## 2. No Video (Power LED Blue)

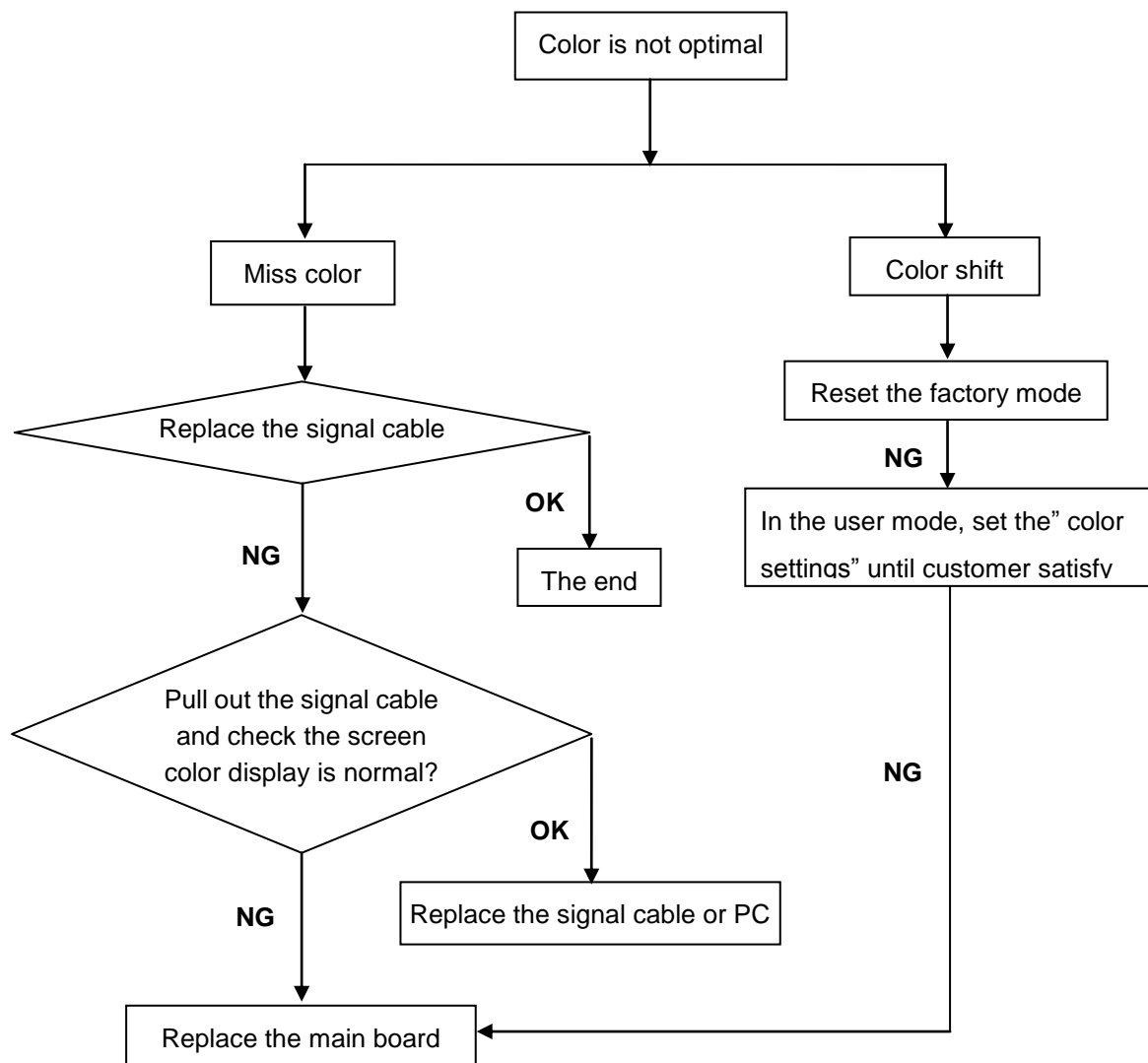


### 3. DIM





#### 4. Color is not optimal



## 9. White- Balance, Luminance Adjustment

Approximately 30 minutes should be allowed for warm up before proceeding white balance adjustment.

How to setting MEM channel you can reference to chroma 7120 user guide or simpl use “SC” key and “NEXT” Key to modify xyY value and use “ID” key to modify the TEXT description Following is the procedure to do white-balance adjust .

### 2. Setting the color temp. you want

#### A. MEM.CHANNEL 3 Warm (6500K):

Warm color temp. parameter is  $x = 313 \pm 20$ ,  $y = 329 \pm 20$

#### B. MEM.CHANNEL 4 Normal (7300K):

Normal color temp. parameter is  $x = 301 \pm 20$ ,  $y = 317 \pm 20$


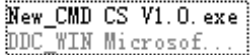

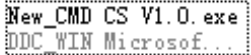
#### C. MEM.CHANNEL 9 Cool (9300K):

Cool color temp. parameter is  $x = 283 \pm 20$ ,  $y = 297 \pm 20$

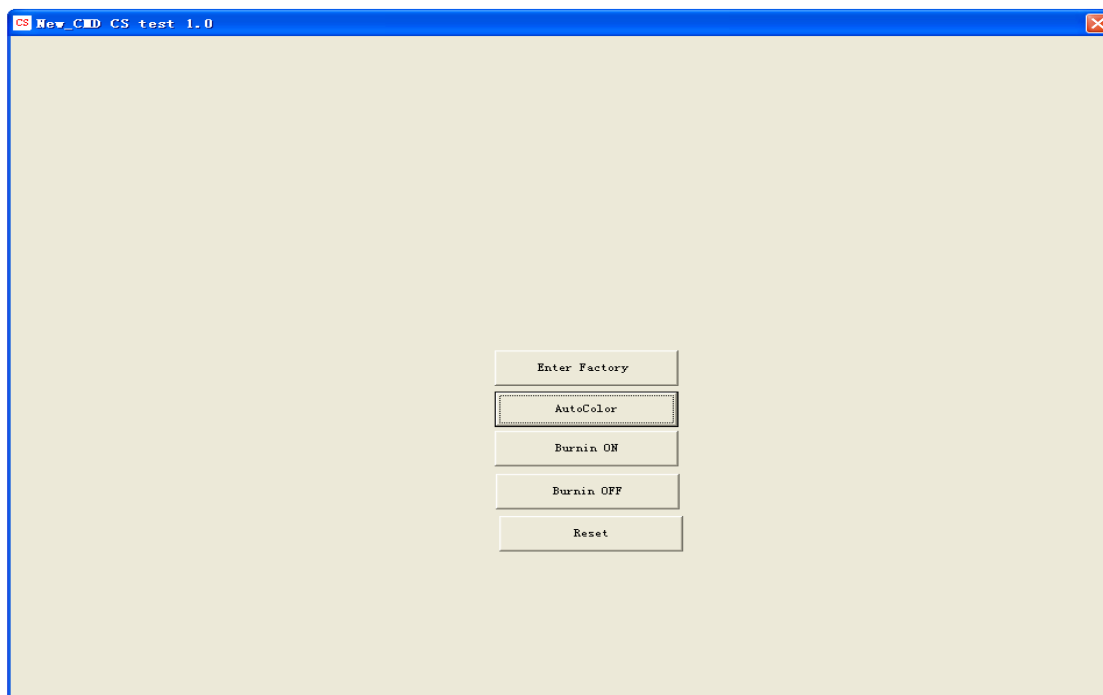
#### D. MEM.CHANNEL 10 (sRGB color):

sRGB color temp. parameter is  $x = 313 \pm 20$ ,  $y = 329 \pm 20$

### 3. Enter into the factory mode

A. USE the tool  , double-click the icon   and

choose “Enter Factory” You will enter into the factory mode



B. Press the MENU button, Pull out the power cord, then plug the power cord. Then the factory OSD will be at the left top of the panel.

### 4. Gain adjustment:

Move cursor to “-F-” and press MENU key

A. Adjust Warm (6500K) color-temperature

1. Switch the chroma-7120 to **RGB-Mode** (with press "MODE" button)
2. Switch the MEM.channel to Channel 3 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show  $x = 313 \pm 20$ ,  $y = 329 \pm 20$
4. Adjust the RED on factory window until chroma 7120 indicator reached the value  $R=100$
5. Adjust the GREEN on factory window until chroma 7120 indicator reached the value  $G=100$
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value  $B=100$
7. Repeat above procedure (item 4, 5, 6) until chroma 7120 RGB value meet the tolerance  $=100 \pm 2$

B. Adjust Normal (7300K) color-temperature

1. Switch the chroma-7120 to **RGB-Mode** (with press "MODE" button)
2. Switch the MEM.channel to Channel 4 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show  $x = 301 \pm 20$ ,  $y = 317 \pm 20$
4. Adjust the RED on factory window until chroma 7120 indicator reached the value  $R=100$
5. Adjust the GREEN on factory window until chroma 7120 indicator reached the value  $G=100$
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value  $B=100$
7. Repeat above procedure (item 4, 5, 6) until chroma 7120 RGB value meet the tolerance  $=100 \pm 2$

C. Adjust Cool (9300K) color-temperature

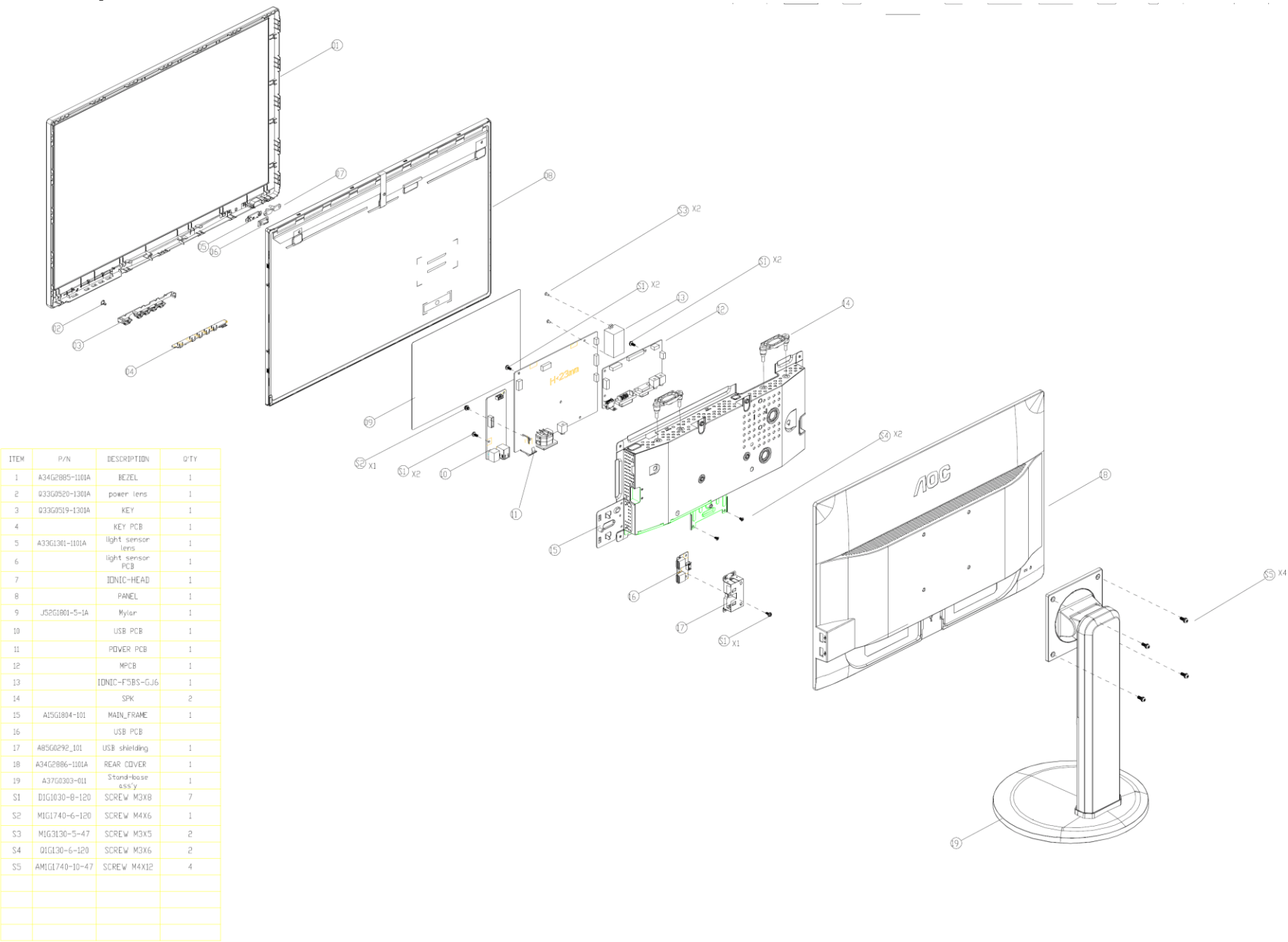
1. Switch the Chroma-7120 to **RGB-Mode** (with press "MODE" button)
2. Switch the MEM. Channel to Channel 9 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show  $x = 283 \pm 20$ ,  $y = 297 \pm 20$
4. Adjust the RED on factory window until chroma 7120 indicator reached the value  $R=100$
5. Adjust the GREEN on factory window until chroma 7120 indicator reached the value  $G=100$
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value  $B=100$
7. Repeat above procedure (item 4, 5, 6) until chroma 7120 RGB value meet the tolerance  $=100 \pm 2$

D. Adjust sRGB color-temperature

1. Switch the chroma-7120 to **RGB-Mode** (with press "MODE" button)
2. Switch the MEM.channel to Channel 10 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show  $x = 313 \pm 20$ ,  $y = 329 \pm 20$
4. Adjust the RED on factory window until chroma 7120 indicator reached the value  $R=100$
5. Adjust the GREEN on factory window until chroma 7120 indicator reached the value  $G=100$
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value  $B=100$
7. Repeat above procedure (item 4, 5, 6) until chroma 7120 RGB value meet the tolerance  $=100 \pm 2$

E. Turn the Power-button off to quit from factory mode.

10. Monitor Exploded View



## 11. BOM List

Note: The parts information listed below are for reference only, and are subject to change without notice. Please go to <http://cs.tpv.com.cn/hello1.asp> for the latest information.

### E2060Sw

#### T9CMUA7CBGACNNE

| Location | Part No.           | Description                        | Remark |
|----------|--------------------|------------------------------------|--------|
|          | 040G 58162435A     | MANUAL P/N LABEL                   |        |
|          | 052G 2191 A        | PAPER TAPE                         |        |
| E08902   | 089G 725GAA DB     | D-SUB CABLE 1500mm                 |        |
| E08901   | 089G417A15N IS     | POWER CORD                         |        |
| ECN804   | 095G8014 6DE45     | HARNESS 6P(CI1406)-6P(2008) 140    |        |
|          | 0D1G1030 6120      | screw                              |        |
|          | 0M1G1140 6120      | screw                              |        |
|          | 708GA028XWPH01     | 40(1790)-XWP                       |        |
| E750     | 750GBM195FGK13N000 | LCD M195FGE-L20 C1 NH CMI          |        |
|          | AM1G1740 10125     | SCREW                              |        |
|          | AM1G1740 10225 CR3 | SCREW                              |        |
|          | H15G00746010GH     | MAINFRAME                          |        |
|          | H40G 45762413B     | P/N LABEL FOR BASE                 |        |
|          | H40G000261598A     | FEATURE-POP LABEL INDIA            |        |
|          | H40G020N61553A     | RATING LABEL E2060Sw PRC APD TW KO |        |
|          | H44GA0281010TW     | CUSHION                            |        |
|          | H44GA0282010TW     | CUSHION                            |        |
|          | H44GA02861501A00HX | ARTWORK CARTON E2060SW CH+INDIAN   |        |
|          | H70G22C161503D     | CD MANUAL 60th                     |        |
|          | KEPCCHA6           | KEY BOARD                          |        |
|          | PLPCCA341MHD1      | ADAPTER BOARD                      |        |
|          | Q33G0519ABJ 1S0130 | KEY                                |        |
|          | Q33G0520 1 1C0100  | LENS_POWER                         |        |
|          | Q34G7495ABJ 3S0130 | REAR_COVER                         |        |
|          | Q34G7498ABJ 2S0100 | STAND                              |        |
|          | Q34G7512ABJ 1S0130 | BASE                               |        |
|          | Q34G7631AEDA1S0101 | BEZEL                              |        |
|          | Q37G02490150ML     | HINGE ASS'Y                        |        |
|          | Q40G000162473A     | CARTON LABEL+BARCODE FOR 3         |        |
|          | Q45G8801M08A0100BX | MANUAL PE BAG                      |        |
|          | Q45G990161940500BX | PROTECT BAG                        |        |
| M05203   | Q52G100204500A00HB | AL FOIL                            |        |
| M05202   | Q52G100204500A00HB | AL FOIL                            |        |
| M05201   | Q52G100204500A00HB | AL FOIL                            |        |

|            |                    |   |  |
|------------|--------------------|---|--|
|            | Q52G1801MNT162BFLT | INSULATING SHEET                        |  |
| ECN403     | S89G179T30N22      | FFC CABLE 30P 150mm 1.0MM               |  |
|            | H40G000261553A     | TCO'05 EPA LABEL                        |  |
|            | Q50G 4 10          | TIE (Y1900221)                          |  |
|            | 756GHCCB0BV0020001 | MAIN BOARD-CBPCCUAACH1                  |  |
| U402       | 056G2233501        | FLASH MX25L2026DM1I-12G 2Mb SOP-8       |  |
| SMTCC-U402 | 100GAMMA005W11     | MCU ASSY-056G2233501                    |  |
| CN408      | 033G3802 6B Y      | CONN 6PIN 2.0                           |  |
| CN404      | 033G3802 9B Y      | CONNECTOR 9P 2.0                        |  |
| CN403      | 033G801930F CH L   | FFC CONN 1.0mm 30P R/A 34mm 6mm         |  |
| CN101      | 088G 35315F HD     | D-SUB CONN 15P BLUE - R/A               |  |
| X401       | 093G 2253B YC      | CRYSTAL 14.3181MHZ/20PF/49US            |  |
|            | 709G52650HM001     | COMSUMPTIVE ASSY                        |  |
|            | H40G 45762429A     | LABEL                                   |  |
| LED001     | 381G00122YG0GP     | LED yellow/green GP32032M/P310-ZY-30    |  |
| CN001      | 395G820H06D539     | HARNESS 6P(SANW)-6P(2008) 280mm         |  |
|            | 709G53570HM001     | COMSUMPTIVE ASSY                        |  |
| GND1       | 009G6005 1         | GND TERMINAL                            |  |
| GND2       | 009G6005 1         | GND TERMINAL                            |  |
| IC902      | 056G 139 9         | IC EL817M(X) photocoupler DIP-4         |  |
| IC901      | 056G 379205        | AC/DC LD7904JGP7 DIP-6                  |  |
| NR901      | 061G 58100 X1      | NTCR 10 20% 3.6W                        |  |
| C904       | 063G107K224 UM     | X2 CAP 0.22uF K 275VAC                  |  |
| C907       | 067G 43Z68015L     | EC 68uF M 450V RGT 18*31.5mm            |  |
| L901       | 073G 174 65 H2     | LINE FILTER 30mH MIN                    |  |
| L903       | 073G 253 91 L      | CHOKE COIL 3.5UH 10% CC-015367HF,VOC,HF |  |
| L905       | 073G 253191 H      | IND CHOKE 1.1uH DADON                   |  |
| L801       | 073G 253242 CP     | CHOKE COIL 47UH 10% 2.5A L040462-6      |  |
| CN901      | 087G 501 32 HC     | AC SOCKET 3P DB-14-05 R/A               |  |
| BD901      | 093G 50460517      | BRIDGE 2KBP08M-70 2A 800V KBP 80A       |  |
| D903       | 093G 60335         | DIODE SR515 5A/150V DO-201AD            |  |
| D904       | 093G 60519         | DIODE SR560-MK23 5A/60V DO-27 SECOS     |  |
| CN804      | 311GW200A06ABX     | WAFER 2.0mm 6P                          |  |
| D801A      | 393G0060A0300S     | SCHOTTKY SR3100-MK18 3A 100V DO-201AD   |  |
| CN902      | 395G082509TW02     | HARNESS 9P-9P 120mm                     |  |
|            | 709G4452 HM001     | COMSUMPTIVE ASSY                        |  |
|            | H40G 45762429A     | LABEL                                   |  |
| T901       | S80GL19P39V1HF     | X'FMR -- -- -- --                       |  |
|            | Q55G 100625        | TIN STICK_LOW ARGENTUM                  |  |
| C410       | 067G 3051007PB     | EC 10UF 20% 50V 5*11 CD263              |  |

|       |                |  |  |
|-------|----------------|--|--|
| C426  | 067G 3051013PB | EC 105C 100uF M 16V 5*11mm JH CD263        |  |
| C427  | 067G 3051013PB | EC 105C 100uF M 16V 5*11mm JH CD263        |  |
| C423  | 067G 3051013PB | EC 105C 100uF M 16V 5*11mm JH CD263        |  |
| C421  | 067G 3051013PB | EC 105C 100uF M 16V 5*11mm JH CD263        |  |
| R003  | 061G0603101 JT | RST CHIP 100R 1/10W 5% TZAI YUAN           |  |
| R001  | 061G0603101 JT | RST CHIP 100R 1/10W 5% TZAI YUAN           |  |
| R002  | 061G0603102 JT | RST CHIP 1K 1/10W 5% TZAI YUAN             |  |
| R004  | 061G0603202 JT | RST 0603 2K 5% 1/10W                       |  |
| R005  | 061G0603202 JT | RST 0603 2K 5% 1/10W                       |  |
| ZD007 | 093G 64 59 SU  | ESD MLVS0603M04 0603                       |  |
| ZD006 | 093G 64 59 SU  | ESD MLVS0603M04 0603                       |  |
| ZD004 | 093G 64 59 SU  | ESD MLVS0603M04 0603                       |  |
| ZD005 | 093G 64 59 SU  | ESD MLVS0603M04 0603                       |  |
| ZD002 | 093G 64 59 SU  | ESD MLVS0603M04 0603                       |  |
| ZD003 | 093G 64 59 SU  | ESD MLVS0603M04 0603                       |  |
| ZD001 | 093G 64 59 SU  | ESD MLVS0603M04 0603                       |  |
|       | 055G 23524     | WELDING FLUX WITHOUT PB                    |  |
|       | Q51G 6 4509    | GLUE_RTV                                   |  |
|       | Q55G 100625    | TIN STICK_LOW ARGENTUM                     |  |
| U801  | 056G 700 11    | LED DRIVER OZ9998BGN-A1-0-TR SOP-16        |  |
| Q801  | 057G 763141    | MOSFET APM1105NUC-TRG 16A 100V<br>TO-252-3 |  |
| R925  | 061G0603100 JF | RST CHIPR 10 OHM 5% 1/10W FENGHUA          |  |
| R917  | 061G06031001FT | RST CHIP 1K 1/10W 1%                       |  |
| R911  | 061G0603152 JF | RST CHIPR 1.5KOHM +-5% 1/10W FENGHUA       |  |
| R916  | 061G0603471 JT | RST CHIPR 470OHM +-5% 1/10W TZAI YUAN      |  |
| R912  | 061G06037501FT | RST CHIP 7K5 1/10W 1%                      |  |
| R804  | 061G0805100 JF | RST CHIPR 10 OHM +-5% 1/8W FENGHUA         |  |
| R807  | 061G0805100 JF | RST CHIPR 10 OHM +-5% 1/8W FENGHUA         |  |
| R815  | 061G08051004FT | RST CHIP R 1 MOHM +-1% 1/8W                |  |
| R806  | 061G0805101 JF | RST 0805 100R 5% 1/8W                      |  |
| R805  | 061G0805104 JY | RST CHIPR 100KOHM 1/8W YAGEO               |  |
| R821  | 061G0805109 JF | RST CHIPR 1 OHM +- 5% 1/8W FENGHUA         |  |
| R820  | 061G0805109 JF | RST CHIPR 1 OHM +- 5% 1/8W FENGHUA         |  |
| R819  | 061G0805109 JF | RST CHIPR 1 OHM +- 5% 1/8W FENGHUA         |  |
| R822  | 061G0805109 JF | RST CHIPR 1 OHM +- 5% 1/8W FENGHUA         |  |
| R810  | 061G08051202FT | RST CHIP 12K 1/8W 1%                       |  |
| R923  | 061G0805123 JF | RST CHIPR 12KOHM +-5% 1/8W FENGHUA         |  |
| R809  | 061G08052003FT | RST CHIP 200K 1/8W 1%                      |  |
| R915  | 061G08053002FF | RST CHIPR 30KOHM +-1% 1/8W FENGHUA         |  |

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| R913 | 061G08053002FF   | RST CHIPR 30KOHM +-1% 1/8W FENGHUA    |  |
| R802 | 061G0805304 JF   | RST CHIPR 300KOHM +-5% 1/8W FENGHUA   |  |
| R803 | 061G0805304 JF   | RST CHIPR 300KOHM +-5% 1/8W FENGHUA   |  |
| R816 | 061G08054702FT   | RST CHIP 47K 1/8W 1%                  |  |
| R811 | 061G08055101FT   | RST CHIP 5K1 1/8W 1%                  |  |
| R927 | 061G0805622 JT   | RST CHIPR 6K2 +-5% 1/8W TZAI YUAN     |  |
| R904 | 061G1206101 JT   | RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN |  |
| R905 | 061G1206101 JT   | RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN |  |
| R906 | 061G1206101 JT   | RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN |  |
| R801 | 061G1206103 JF   | RST CHIPR 10KOHM +-5% 1/4W FENGHUA    |  |
| R818 | 061G1206103 JF   | RST CHIPR 10KOHM +-5% 1/4W FENGHUA    |  |
| R920 | 061G1206104 JT   | RST CHIPR 100KOHM +-5% 1/4W TZAI YUAN |  |
| R921 | 061G1206104 JT   | RST CHIPR 100KOHM +-5% 1/4W TZAI YUAN |  |
| R922 | 061G1206104 JT   | RST CHIPR 100KOHM +-5% 1/4W TZAI YUAN |  |
| R919 | 061G1206104 JT   | RST CHIPR 100KOHM +-5% 1/4W TZAI YUAN |  |
| R900 | 061G1206105 JF   | RST CHIPR 1 MOHM +-5% 1/4W FENGHUA    |  |
| R902 | 061G1206105 JF   | RST CHIPR 1 MOHM +-5% 1/4W FENGHUA    |  |
| R901 | 061G1206105 JF   | RST CHIPR 1 MOHM +-5% 1/4W FENGHUA    |  |
| R926 | 061G1206159 JT   | RST CHIP R 1.5ohm 1/4W +/-5%          |  |
| R813 | 061G1206308 JT   | RST 1206 0.3R 5% 1/4W                 |  |
| R812 | 061G1206308 JT   | RST 1206 0.3R 5% 1/4W                 |  |
| R908 | 061G1206470 JT   | RST CHIPR 47 OHM +-5% 1/4W TZAI YUAN  |  |
| R907 | 061G1206470 JT   | RST CHIPR 47 OHM +-5% 1/4W TZAI YUAN  |  |
| R909 | 061G1206470 JT   | RST CHIPR 47 OHM +-5% 1/4W TZAI YUAN  |  |
| R817 | 061G1206681 JF   | RST 1206 680R 5% 1/4W FENGHUA         |  |
| R910 | 061G1206911 JT   | RST 1206 910R 5% 1/4W                 |  |
| C916 | 065G060310332K Y | CAP CHIP 0603 10N 50V X7R +/-10%      |  |
| C812 | 065G080510131J F | CAP CHIP 0805 100PF J 50V NPO         |  |
| C815 | 065G080510232K Y | CAP CHIP 0805 1N 50V X7R +/-10%       |  |
| C803 | 065G080510232K Y | CAP CHIP 0805 1N 50V X7R +/-10%       |  |
| C802 | 065G080510332K Y | CAP CHIP 0805 10N 50V X7R +/-10%      |  |
| C814 | 065G080510432K 3 | CAP CHIP 0805 100N 50V X7R +/-10%     |  |
| C917 | 065G080510432K Y | CAP CHIP 0805 100N 50V X7R +/-10%     |  |
| C915 | 065G080510432K Y | CAP CHIP 0805 100N 50V X7R +/-10%     |  |
| C901 | 065G080510432K Y | CAP CHIP 0805 100N 50V X7R +/-10%     |  |
| C806 | 065G080522432K Y | CAP CHIP 0805 220N 50V X7R +/-10%     |  |
| C805 | 065G080522512K 3 | CAP CHIP 0805 2U2 16V X7R +/-10%      |  |
| C905 | 065G080533232K A | CAP 0805 3.3NF 10% 50V X7R            |  |
| C807 | 065G080547432K 3 | CAP 0805 470NF 10% 50V X7R            |  |
| C804 | 065G080547432K T | CAP CHIP 0805 0.47UF K 50V X7R        |  |



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| C813  | 065G080568131J Y   | CAP CHIP 0805 680P 50V NP0 +/-5%     |  |
| C910  | 065G120622272K Y   | CER 1206 2N2 500V X7R 10%            |  |
| C920  | 065G120622272K Y   | CER 1206 2N2 500V X7R 10%            |  |
| C919  | 065G120622272K Y   | CER 1206 2N2 500V X7R 10%            |  |
| C911  | 065G120622272K Y   | CER 1206 2N2 500V X7R 10%            |  |
| ZD902 | 093G 39S 38 T      | PTZ 9.1B                             |  |
|       | 709G4452 HS001     | COMSUMPTIVE ASSY                     |  |
| SW003 | 077G603S AI HJ     | TACT SWITCH AI 2PIN SEALED           |  |
| SW004 | 077G603S AI HJ     | TACT SWITCH AI 2PIN SEALED           |  |
| SW002 | 077G603S AI HJ     | TACT SWITCH AI 2PIN SEALED           |  |
| SW005 | 077G603S AI HJ     | TACT SWITCH AI 2PIN SEALED           |  |
| SW001 | 077G603S AI HJ     | TACT SWITCH AI 2PIN SEALED           |  |
| E715  | 715G5357K03000001M | KEY PCB FR1 SS 117*10*1.6MM          |  |
| FB802 | 095G 90 23         | JUMP WIRE - -                        |  |
|       | 709G4452 HA001     | COMSUMPTIVE ASSY                     |  |
| E715  | 715G4452P02002001M | PWR PCB FR1 CTI>600 SS 152*122*1.6MM |  |
| J9003 | 095G 90 23         | JUMP WIRE - -                        |  |
| J9004 | 095G 90 23         | JUMP WIRE - -                        |  |
| C801  | 367G215X3314AT     | EC 330UF 20% 25V 10*12 RF            |  |
| F902  | 084G 56 5 C        | FUSE 5A 250V MST 5A 250V             |  |
| J9014 | 095G 90 23         | JUMP WIRE - -                        |  |
| J9022 | 095G 90 23         | JUMP WIRE - -                        |  |
| J9002 | 095G 90 23         | JUMP WIRE - -                        |  |
| Q903  | 057G 530503 T      | 2SD1207T                             |  |
| C908  | 367G215X4707AT     | EC 47uF 20% 50V - 6.3*11mm RG        |  |
| D902  | 093G 6026T52T      | CTIFIER DIODE FR107                  |  |
| J9009 | 095G 90 23         | JUMP WIRE - -                        |  |
| R827  | 095G 90 23         | JUMP WIRE - -                        |  |
| ZD901 | 093G 39A0852T      | GDZJ18B                              |  |
| C816  | 065G517K102 2T6921 | CAP CER 1000PF K 500V Y5P            |  |
| J9016 | 095G 90 23         | JUMP WIRE - -                        |  |
| J9020 | 095G 90 23         | JUMP WIRE - -                        |  |
| J9007 | 095G 90 23         | JUMP WIRE - -                        |  |
| J9006 | 095G 90 23         | JUMP WIRE - -                        |  |
| C921  | 065G500K4722HT     | CAP CER 4.7NF 10% 50V X7R            |  |
| J9019 | 095G 90 23         | JUMP WIRE - -                        |  |
| D901  | 093G 6026T52T      | CTIFIER DIODE FR107                  |  |
| J9021 | 095G 90 23         | JUMP WIRE - -                        |  |
| R918  | 061G152M25152T SY  | RST MOF 250R 5% 2W                   |  |
| C914  | 367G415X4713AT     | EC 470uf 20% 16V 10X13 RS            |  |

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|-------|-------------------|---|--|
| IC903 | 056G 563355       | Shunt Regu TL431G-A-TA TO-92 42V 150mA  |  |
| J9012 | 095G 90 23        | JUMP WIRE - -                           |  |
| C906  | 065G 2K152 2T6921 | CAP CER 1500pF K 2KV Y5P                |  |
| FB801 | 071G 55 29        | FERRITE BEAD                            |  |
| C903  | 365G306K6812WR    | CAP Y1 680PF 10% 250V Y5P               |  |
| J9015 | 095G 90 23        | JUMP WIRE - -                           |  |
| C809A | 067G 4154799LT    | EC 4.7UF 20% 100V 8*11.5                |  |
| J9005 | 095G 90 23        | JUMP WIRE - -                           |  |
| FB804 | 071G 55 29        | FERRITE BEAD                            |  |
| R903  | 061G152M39852T SY | RST MOF 0.39R 5% 2W                     |  |
| J9011 | 095G 90 23        | JUMP WIRE - -                           |  |
|       | 006G 31500        | EYELET                                  |  |
| C912  | 367G215S6814AT    | EC 680UF 20% 25V - 12.5*16 RF           |  |
| C900  | 065G306M10233R    | CAP Y1 1NF 20% 250V Y5U                 |  |
| F901  | 084G 56 3 C       | FUSE 3.15A 250V MST 3.15A 250V          |  |
| J9008 | 095G 90 23        | JUMP WIRE - -                           |  |
| J9013 | 095G 90 23        | JUMP WIRE - -                           |  |
| C902  | 365G306K6812WR    | CAP Y1 680PF 10% 250V Y5P               |  |
| FB803 | 071G 55 29        | FERRITE BEAD                            |  |
| C909  | 367G415X1024AT    | EC 1000UF 20% 25V 12.5X20 RS 4000 hr RS |  |
| FB901 | 071G 55 29        | FERRITE BEAD                            |  |
| J9001 | 095G 90 23        | JUMP WIRE - -                           |  |
| U404  | 056G 585 4A       | LDO AP1117E33G-13 1A 3.3V SOT-223       |  |
| U101  | 056G1133 34 1     | EEPROM M24C02-RMN6TP 2Kb SO-8           |  |
| U402  | 056G2233501       | FLASH MX25L2026DM1I-12G 2Mb SOP-8       |  |
| Q404  | 057G 417 4        | PMBS3904/PHILIPS-SMT(04)                |  |
| Q406  | 057G 417 4        | PMBS3904/PHILIPS-SMT(04)                |  |
| Q402  | 057G 417 6        | PMBS3906/PHILIPS-SMT(06)                |  |
| Q403  | 057G 417 6        | PMBS3906/PHILIPS-SMT(06)                |  |
| Q405  | 057G 763940       | MOSFET AO3401A SOT-23                   |  |
| R401  | 061G0402000 JY    | RST CHIPR MAX 0R05 OHM 1/16W YAGEO      |  |
| R402  | 061G0402000 JY    | RST CHIPR MAX 0R05 OHM 1/16W YAGEO      |  |
| R403  | 061G0402000 JY    | RST CHIPR MAX 0R05 OHM 1/16W YAGEO      |  |
| R406  | 061G0402000 JY    | RST CHIPR MAX 0R05 OHM 1/16W YAGEO      |  |
| R481  | 061G0402000 JY    | RST CHIPR MAX 0R05 OHM 1/16W YAGEO      |  |
| R498  | 061G0402000 JY    | RST CHIPR MAX 0R05 OHM 1/16W YAGEO      |  |
| R115  | 061G0402100 JY    | RST CHIPR 10 OHM +-5% 1/16W YAGEO       |  |
| R111  | 061G0402100 JY    | RST CHIPR 10 OHM +-5% 1/16W YAGEO       |  |
| R104  | 061G0402100 JY    | RST CHIPR 10 OHM +-5% 1/16W YAGEO       |  |
| R138  | 061G0402101 JY    | RST CHIPR 100 OHM +-5% 1/16W YAGEO      |  |

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| R139 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R485 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R412 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R413 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R411 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R102 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R420 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R103 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R442 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R405 | 061G0402101 JY | RST CHIPR 100 OHM +-5% 1/16W YAGEO   |  |
| R417 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R433 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R439 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R421 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R408 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R414 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R465 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R410 | 061G0402103 JF | RST CHIPR 10KOHM +-5% 1/16W FENGHUA  |  |
| R118 | 061G0402104 JF | RST CHIPR 100KOHM +-5% 1/16W FENGHUA |  |
| R436 | 061G0402104 JF | RST CHIPR 100KOHM +-5% 1/16W FENGHUA |  |
| R105 | 061G0402222 JF | RST CHIPR 2.2KOHM +-5% 1/16W FENGHUA |  |
| R106 | 061G0402222 JF | RST CHIPR 2.2KOHM +-5% 1/16W FENGHUA |  |
| R469 | 061G0402222 JF | RST CHIPR 2.2KOHM +-5% 1/16W FENGHUA |  |
| R466 | 061G0402222 JF | RST CHIPR 2.2KOHM +-5% 1/16W FENGHUA |  |
| R443 | 061G0402223 JF | RST CHIPR 22KOHM 5% 1/16W FENGHUA    |  |
| R440 | 061G0402223 JF | RST CHIPR 22KOHM 5% 1/16W FENGHUA    |  |
| R134 | 061G0402223 JF | RST CHIPR 22KOHM 5% 1/16W FENGHUA    |  |
| R427 | 061G0402392 JY | RST CHIPR 3.9KOHM 5% 1/16W YAGEO     |  |
| R428 | 061G0402392 JY | RST CHIPR 3.9KOHM 5% 1/16W YAGEO     |  |
| R117 | 061G0402470 JY | RST CHIPR 47 OHM 5% 1/16W YAGEO      |  |
| R130 | 061G0402470 JY | RST CHIPR 47 OHM 5% 1/16W YAGEO      |  |
| R108 | 061G0402470 JY | RST CHIPR 47 OHM 5% 1/16W YAGEO      |  |
| R131 | 061G0402470 JY | RST CHIPR 47 OHM 5% 1/16W YAGEO      |  |
| R114 | 061G0402470 JY | RST CHIPR 47 OHM 5% 1/16W YAGEO      |  |
| R109 | 061G0402471 JF | RST CHIPR 470 OHM 5% 1/16W FENGHUA   |  |
| R132 | 061G0402472 JF | RST CHIPR 4.7KOHM +-5% 1/16W FENGHUA |  |
| R133 | 061G0402472 JF | RST CHIPR 4.7KOHM +-5% 1/16W FENGHUA |  |
| R441 | 061G0402472 JF | RST CHIPR 4.7KOHM +-5% 1/16W FENGHUA |  |
| R438 | 061G0402472 JF | RST CHIPR 4.7KOHM +-5% 1/16W FENGHUA |  |
| R116 | 061G0402750 JF | RST CHIPR 75 OHM +-5% 1/16W FENGHUA  |  |

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| R112  | 061G0402750 JF   |  | RST CHIPR 75 OHM +-5% 1/16W FENGHUA  |  |
| R107  | 061G0402750 JF   |  | RST CHIPR 75 OHM +-5% 1/16W FENGHUA  |  |
| R101  | 061G0603000 JF   |  | RST CHIPR MAX 0R05 1/10W FENGHUA     |  |
| R136  | 061G0603201 JF   |  | RST CHIP 200R 1/10W 5% FENGHUA       |  |
| R135  | 061G0603201 JF   |  | RST CHIP 200R 1/10W 5% FENGHUA       |  |
| R137  | 061G0603201 JF   |  | RST CHIP 200R 1/10W 5% FENGHUA       |  |
| R468  | 061G0603331 JF   |  | RST CHIPR 330OHM +-5% 0603           |  |
| R471  | 061G0603471 JF   |  | RST CHIPR 470OHM +-5% 1/10W FENGHUA  |  |
| R434  | 061G1206301 JF   |  | RST CHIPR 300 OHM +-5% 1/4W fenghua  |  |
| C106  | 065G040210232K A |  | CAP 0402 1NF 10% 50V X7R             |  |
| C407  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C120  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C420  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C428  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C422  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C121  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C424  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C122  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C404  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C406  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C403  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C432  | 065G040210412K A |  | CAP CHIP 0402 100nF K 16V X7R        |  |
| C102  | 065G040222031J Y |  | CAP CHIP 0402 22P 50V NP0 +/-5%      |  |
| C411  | 065G040222031J Y |  | CAP CHIP 0402 22P 50V NP0 +/-5%      |  |
| C103  | 065G040222031J Y |  | CAP CHIP 0402 22P 50V NP0 +/-5%      |  |
| C412  | 065G040222031J Y |  | CAP CHIP 0402 22P 50V NP0 +/-5%      |  |
| C408  | 065G040222415K Y |  | CAP CHIP 0402 220nF 16V X5R          |  |
| C419  | 065G040222415K Y |  | CAP CHIP 0402 220nF 16V X5R          |  |
| C117  | 065G040222415K Y |  | CAP CHIP 0402 220nF 16V X5R          |  |
| C101  | 065G040247312K T |  | CAP 0402 47NF 10% 16V X7R            |  |
| C107  | 065G040247312K T |  | CAP 0402 47NF 10% 16V X7R            |  |
| C109  | 065G040247312K T |  | CAP 0402 47NF 10% 16V X7R            |  |
| C113  | 065G040247312K T |  | CAP 0402 47NF 10% 16V X7R            |  |
| C110  | 065G040247312K T |  | CAP 0402 47NF 10% 16V X7R            |  |
| C105  | 065G040247312K T |  | CAP 0402 47NF 10% 16V X7R            |  |
| C104  | 065G040250931C Y |  | CAP 0402 5PF 0.25pF 50V NP0          |  |
| C108  | 065G040250931C Y |  | CAP 0402 5PF 0.25pF 50V NP0          |  |
| C111  | 065G040250931C Y |  | CAP 0402 5PF 0.25pF 50V NP0          |  |
| C499  | 065G080510615K T |  | CHIP 10uF 16V X5R 0805               |  |
| FB406 | 071G 56K121 M    |  | CHIP BEAD 120OHM 6A MGLB2012-120T-LF |  |

|       |                    |                                      |  |
|-------|--------------------|--------------------------------------|--|
| FB402 | 071G 56K121 M      | CHIP BEAD 120OHM 6A MGLB2012-120T-LF |  |
| FB401 | 071G 56V301 M      | CHIP BEAD 0805 300R 25% 700mA        |  |
| FB101 | 071G 59K190 M      | CHIP BEAD 0603 19R/500mA             |  |
| FB102 | 071G 59K190 M      | CHIP BEAD 0603 19R/500mA             |  |
| FB103 | 071G 59K190 M      | CHIP BEAD 0603 19R/500mA             |  |
| D107  | 093G 64 33         | SWITCHING BAV99 0.2A 85V SOT-23      |  |
| D106  | 093G 64 33         | SWITCHING BAV99 0.2A 85V SOT-23      |  |
| D108  | 093G 64 33         | SWITCHING BAV99 0.2A 85V SOT-23      |  |
| D101  | 093G 64 42 PP      | BAV70 SOT-23                         |  |
| ZD106 | 093G 39GA01 T      | RLZ5.6B                              |  |
| ZD101 | 093G 39GA01 T      | RLZ5.6B                              |  |
| ZD104 | 093G 39GA01 T      | RLZ5.6B                              |  |
| ZD102 | 093G 39GA01 T      | RLZ5.6B                              |  |
| ZD103 | 093G 39GA01 T      | RLZ5.6B                              |  |
| ZD107 | 093G 39GA01 T      | RLZ5.6B                              |  |
| C413  | 093G 64S501 SU     | ESD MLVS0402M04 4V 402               |  |
| C414  | 093G 64S501 SU     | ESD MLVS0402M04 4V 402               |  |
| C417  | 093G 64S501 SU     | ESD MLVS0402M04 4V 402               |  |
| C415  | 093G 64S501 SU     | ESD MLVS0402M04 4V 402               |  |
| C416  | 093G 64S501 SU     | ESD MLVS0402M04 4V 402               |  |
| U401  | 356G0562064B20     | SCALER TSUMU19AR6-1 LQFP-64          |  |
|       | 709G52650HS001     | COMSUMPTIVE ASSY                     |  |
| E715  | 715G5265M01000004I | MAIN PCB FR4 DS 65X64X1.6MM          |  |
|       | H52G 2191 1        | 美纹胶带                                 |  |
|       | H52G1701 1         | MESH PRINTTING_PAPER                 |  |

